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ILLUSTRATION.

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A Treatise on Timber.

THE series of influences and processes, natural and artificial, through which wood passes in the course of its transition from the state of a tree to that of baulks and planks ready for use in construction, and further into the finer and more minute operations of joinery, are not much taken into consideration except by a few whose business it necessarily is to do so. To the majority of persons wood presents itself under two general aspects only; as a living and more or less beautiful vegetation (unless the more practical view of it as an "excrescence of the earth provided for the payment of debts" predominate), and as a material to be had in blocks of convenient sizes for cutting and carving in various operations of building or construction on a smaller scale. The circumstances attending the transition from one state to the other are hardly thought of in general and have scarcely been very systematically considered even by those who are practically concerned in knowing all about them. We have treatises on trees, and treatises on carpentry, but we hardly possess in English any volume containing so full and comprehensive a study of wood from its growth in the tree to its manipulation in the joiner's mortising or rebating machine, as is collected in the French treatise,* named *Les Bois*, under which heading is condensed into a volume of moderate size a review of the material under all its aspects and conditions; the effects on its growth of site, climate, and treatment; the diseases and attacks to which it is subject; the chemistry of its formation; the processes of cutting, transportation, and commercial distribution; and its various uses and treatment, from the comparatively delicate operations of joinery to the formation of railway sleepers and telegraph-posts. The book is written from a French point of view, of course, and in regard to certain points its information is only or chiefly applicable to France, but in the main its value is general. Being the joint production of a member of what we should call in England the "Woods and Forests Office," and of a naval engineer, there seems to be in the authorship a kind of guarantee that each end of the subject would be fairly and equally represented.

Accordingly, with the precision and completeness of arrangement characteristic of their nation, the authors commence with the consideration of the cellular construction of wood as exhibited by the microscope, the formation and development of the tree from the embryo, and the formation of the bark around the exterior; illustrated by various diagrams from microscopic observations. Under the same head, "Physiologie," we have an elaborate analysis of the whole system of the growth and nourishment of trees, and the causes of injury and decay. A good deal of the information given on the former subject, illustrating minutely the chemical action of the tree in process of growth, has little or no relation to the practical uses of wood, and is purely botanical in its interest. Among causes of faults and injuries in timber, the authors note one which few, perhaps, would think of in connexion with the practical part of the subject; namely, the bruises in the wood from the contact of heavy branches in a strong wind. No sound economist, therefore, can permit himself to contemplate with pleasure what has always been supposed one of the most beautiful sights in nature, the waving of the woods under the action of the wind; he must reflect that while he is admiring the effect, the market value of the wood is being deteriorated, and the formation of knots and shakes is going on, to be the subject of future difficulties and disputes on the part of some architect or clerk of works. The remarks on the relation of forests to temperature (p. 115) are sufficiently interesting for quotation:—

"Trees are actual living machines, fabricating for us combustible matter; but, as nothing in Nature is either gained or lost, they must take from somewhere the warmth which they accumulate in their tissues; the bad conductibility of their trunks and stalks does not permit them to draw up warmth from the earth; they can only absorb it from the air, which they do at the same time that they decompose carbonic acid from it. Trees would accordingly be permanent refrigerators if they were constantly fabricating combustible matter, but in reality they only do so during the season of vegetation and in sunshine; consequently it is only during that limited period that they cool the atmosphere. During the rest of their existence, that is to say when they are deprived of leaves, and when there is no sun, not only do they cease to absorb heat or to exercise a cooling influence, but they even spend a portion of their combustible matter in producing a slight warmth, of which the surrounding air always receives something. Lastly, the emission of damp which accompanies their transpiration is much greater in the heat of the day than at night, in summer than in winter, which is a second cause of coolness in summer. . . .

One may say, then, that *forest vegetation reduces the variations of the atmosphere*. Its action is, it is true, very feeble in comparison with the forces producing atmospheric variation; but it is continuous, and it has accordingly been possible to define it from the mean of a great number of observations. It has been ascertained as a fact that, first, the mean temperature is higher outside a wood than within it by about half a degree; the mean of greatest daily temperature shows the same proportion, and that of least daily temperature the reverse; secondly, the variations of temperature make themselves felt within the wood in the same proportion as outside it, but more slowly and with less disturbance.

Although forests are in general the moderators of temperature, it must be remembered that in winter their branches are charged with snow, and that then the refrigerating surfaces are greater within the wood than without it, and in consequence the temperature of any comparatively warm body abates more rapidly."

The direct influence of forests upon the healthfulness of a country is believed, however, to be hardly important or appreciable, except in climates at once hot and dry. Observations on this head, however, are not at present numerous enough for any precise deductions to be drawn from them; but we incline the other way. The relation between forest land and public wealth is more intimate. The authors sum up this part of the question carefully. They conclude that forested countries, where the soil is of good quality, would be richer if partially disforested, and that the timber itself is more carefully and economically used where its extent is restricted. The only case in which it would be of advantage to preserve forests in good soil is where they consist of trees which produce wood fitted for a superior class of work, for these woods are rare, and their preservation calls for certain sacrifices. The interest of a country, therefore, is to clear forest ground where the soil is good, at the same time reserving timber enough for the requirements of its industries. On the other hand, the same interest dictates the planting of bad soil, which absorbs more labour than it is worth in cultivation, with forest-trees. It is the duty of careful and providential Governments, think our authors, to see to these things. The interest of the proprietor of wood is often adverse to that of the country. In mountainous and barren wooded districts, an owner of land is under temptation to capitalise by making a clearance of his wood and realising by it. He is for the moment the richer, but the country is the poorer, since for a good timber district has been substituted bad pasture or arable land. In France the clearance of plain countries from forest has been carried on so far already that, before long, no part will be wooded, possibly, except that which is utterly unfit for anything else. "*Il appartient à un gouvernement prévoyant d'aviser aux moyens de conserver et d'améliorer les rares massifs boisés où la marine, l'artillerie, et l'industrie trouveront les bois de grande dimension et de qualité supérieure, que la propriété privée est impuissante à produire.*" Perhaps these latter considerations are not quite without point and significance for other Governments than that of France, whether in regard to the conservation of existing timber or the utilisation of lands for forest which present no capacity for cultivation of another kind. The manner in which English oak has been allowed to go without any systematic attempt at propagating and cultivating, in suitable districts, what might have been so valuable a source of revenue, is a curious instance of the thoughtlessness upon such matters which has usually characterised English legislation.

It may be observed here that under the heading of "Statistique forestière" we have a comparative table of the proportion of wooded land to the rest of the area in the principal countries of Europe. The British Isles give by far the

* Les Bois, indigènes et étrangères: Physiologie, Culture, Production, Qualités, Industrie, Commerce. Par Adolphe E. Dupont (Ingénieur des Constructions navales) et Bouquet de la Grye (Conservateur des Forêts, Membre de la Société Centrale d'Agriculture de France). Paris: T. Rothschild. London: Williams & Norgate.

lowest average, only "0·04," while France is "0·16." In proportion of population given *par hectare* (2½ acres), in an adjoining column, England is the highest of any country but Holland; the figures for the two respectively being "0·911" and "0·960"; the proportion of wooded country in Holland is 0·07. The population figures of France, which shows four times the proportion of wooded country that Great Britain does, are a good deal more than one-fourth less than ours. Comparing the two statistics, one may conclude that in spite of our high population figures, there are still in England "lands that want hands."

Under the heading "Exploitation" we have a detailed summary of the processes of felling, sawing, and transportation; the preparation of charcoal; the separation of the bark for special manufactures in which it is used, &c. The authors are severe on the old-fashioned method of felling trees with the axe, by which 5 per cent. of the trunk wood is generally lost, and the tree is brought down with a crash which extensively damages the branches. Apparently they recommend the two-handed saw in preference, as working with less injury to the tree and more economy; but it is not very easy to see, after all, how trees of the largest size are to be "let down easy," without a complication of machinery which would more than compensate (as a matter of economy) for any saving effected by the better preservation of parts of the tree. The best method of sawing up the trunk so as to gain as much from the material as possible, is carefully gone into and illustrated. The "qualities and defects" of wood occupy considerable space, and contain much information and suggestion. In regard to the action of fire on wood, the authors repeat the opinion which has already been expressed as the result of experience and observation among English architects, that though light and porous woods are very combustible, and burn rapidly, the hard woods, after their outer surface is burned, as well as the gas which the heat disengages from the centre of the mass, practically resist fire for a long time, and though slowly charred, maintain their strength and power of cohesion and resistance, in the mass, almost unimpaired. In reference to the duration of wood, and the effect in regard to this of thorough dryness (seasoning), the following illustration is given:—"In the middle of the seventeenth century, the English built their ships of war with very well seasoned oak, of good quality; and these lasted thirty years. At the close of that century their constructions, made more hastily, did not last more than fourteen years; and their duration was at last reduced to eight years, when the wars of the first empire compelled them to build quickly and with fresh wood."

The section, "Travail des Bois," begins, like the others, with first principles:—

"It is by cutting certain parts and leaving others that we are enabled to give to wood the forms we wish. The fibres have to be cut sometimes across, sometimes lengthways; in some cases by great quantities at a time, in other cases by very small ones; the same tool cannot therefore satisfy so many differing conditions, it is necessary to have a varied series of them appropriate to different operations; but, whatever the tools may be, their working parts may all be compared to wedges working upon the wood at certain angles at which they have the most effect in carrying out the intended operation."

This generalisation is the preface to a description and classification of wood-working tools in all their branches; in the course of which some of the larger machines for sawing, mortise-cutting, &c., are delineated in very well executed engravings. The authors cannot do without a little more of the philosophy of the subject, however, and their definition of tools as various forms of wedges leads to a little consideration of the mechanical manner in which the edges of the tools act upon the particles of wood, illustrated by a diagram, showing the normal tool or "wedge" in operation on the fibre, in four positions, which include every manner in which the cutting edge of tools is applied to wood. Perhaps the average workman would be hardly likely to do his work any better for these considerations; but it is just as well to be reminded of principles and of the why and wherefore of everyday operations at times.

The "Commerce des Bois" has an important position to fill in social mechanism,—"it is, to reduce, within the limits of strict necessity, the endless series of dimensions demanded by the different industries which have to be provided for, in obliging them at times to modify slightly their work, to such a degree that the provision of wood necessary for all branches of industry may be limited to the least possible number of typical dimensions, of customary fabrication, among which each industry finds the raw material necessary for its operations as nearly in the right form as possible." The industry requiring the largest amount of types or special forms of wood is of course ship-building; though the demand for curved pieces of various proportions is not so great now as when ships of war were still built entirely of oak. The great amount of wood employed in comparatively rough forms in engineering operations is surprising when it comes to be stated on paper. Under the head of "Traverses de Chemin-de-fer" we find that France annually employs about 2,700,000 sleepers in the making or repairing of railways, representing 270,000 cubic mètres of undressed wood. Telegraph-posts form now an important special item in the expenses of Government works: and again, under the head of "Perches et Étais de Mine," we find that in England, "which in this respect is the nation most favoured by the solidity of the soil and of the coal strata, and where the owners of the mines are too careful of the main chance to leave any wood unused in the old workings," more than a million is annually spent on this item alone. This seems enormous, but the figures are carefully and deliberately given by the authors; and it is added that the expenditure in France is more than double that of England in proportion to the coal excavated, though of course the actual total is less than in this coal-producing country.

We have merely given a rough outline of the information to be obtained in this very exact and valuable treatise, which is well worth the attention of those to whom the growth and manipulation of timber is a matter of interest in its wider aspect, as a portion of the commercial wealth of their country, and as touching on the important question of the best utilisation of the whole of the soil of the country so as to gain from it all that it is fitted to supply; a consideration which, in regard to sundry not inconsiderable tracts of English land, can hardly be said to have been entered on at all as yet.

COST OF OUR PUBLIC BUILDINGS: HOUSES FOR THE MULTITUDE.

It is matter, not only of interest, but of definite professional information, to learn from time to time what is expended on our public buildings. Since the year 1851 large sums have been laid out in the erection of schools, museums, and other buildings, intended to further the æsthetic education of the people, under the direction of the Science and Art Department of the Administration. At one time annual reports told us, from year to year, what was going on in this respect. Then a change took place. The expenditure on buildings was transferred to the charge of another department. As to the advantage or disadvantages of this course we have nothing to say. As a practical architectural question, we presume it matters but little. But there was the inconvenience that the outlay became far more difficult to understand. It was only by the comparison of different estimates and amounts, by analysis and combination, that a result could be obtained. And those public writers are few who have the time or the habit thus to collect the details on which to ground their communications to their readers.

During the last month, however, two returns to orders of the House of Commons have been printed, by comparison of which it is possible to obtain a more comprehensive view of the outlay on museums and similar buildings, from 1852 to the present year. The first of these, which was moved for by Mr. Sullivan, purports to be a "Return of all sums derived from Parliamentary grants, expended each year since 1852 by the Science and Art Department, or under its control and direction, in England, Scotland, and Ireland respectively, specifying, as to the years 1872, 1873, and 1874, the several purposes for which such sums were expended." The abstract return, on the first page of this document, gives a gross total of 2,958,235*l*. But there is a note to this page, which should not escape attention, "Besides these amounts" (for building), "other sums have been expended by the Office of Works in England and the Office of Public Works in Ireland. See respective returns." This note is explanatory of the fact that in England, since 1869–1870; in Scotland, since the year 1855–1856; and in Ireland, since the year 1868–1869, no sums are entered in the abstract as expended on "buildings."

The second return was moved for by Mr. McLaren. It shows "the sums voted during each of the last five years, under Class I. and Class III., and for specimens and books, for the British Museum, Natural History Museum, South Kensington Museum, Bethnal-green Museum, and the Edinburgh Industrial Museum (Museum of Science and Art), with the total amounts of the same, and the average annual amount of votes, &c." Class I., we should explain, regards Works and Building; Class IV., Education and Salaries.

It would appear at first sight as if this return, which does not present any gross total on its face, would exactly supply the blank, as to England at least, in the former return. But even here is a hitch. There is a N.B. to the following very pertinent effect:—"It must be remembered that the above table, although showing the amount voted, is no guide to a knowledge of the sums actually expended. In the four years to 1873, 1874 inclusive, the amount voted for the Natural History Museum was 166,000*l*.; that expended, only 66,286*l*."

It is of course the duty of the officers who superintend the returns to the orders of the Houses of Parliament to take care that the exact information required by the order for the return is supplied. We are not prepared to say that it is their duty to go outside the exact answer. But, that being the case, it is a misfortune that the motions of private members should be so framed, that the exhaustive information, which is of value to the public, should not be brought out when two or three returns are asked for on different branches of the same subject. We cannot tell, whether, in the present case, either or both of the hon. members obtained that information which they actually sought. But we are quite sure of the inconvenience felt by any one who, having procured the above returns, still finds himself at a loss to know what we have expended on the various buildings named on the back of the report.

The discrepancy between sums voted and sums expended is one of those relics of our old constitutional jealousy which, so far as our own knowledge of its working extends, has a simply mischievous effect. For the year 1873–74, for example, Parliament voted the sum of 80,000*l*. for the buildings of the Natural History Museum. It might so happen, and we suppose, in point of fact, did so happen, that the superintendents of this undertaking were not so ready with their plans and contracts as to insure the expenditure of that sum within the year. Let us suppose—not as an approximation to fact, but for the sake of argument—that they were only able to spend 15,000*l*. within the year. The remaining 65,000*l*. would then lapse—be lost, as we have heard it called in the Government works—that is to say be unexpended within the year. Instead, however, of remaining to the credit of the Museum, to be expended in the following year, together with any further sum voted for that purpose, the vote expires. Thus, for 1874–75, 80,000*l*. was again voted for the Natural History Museum, without reference to the question whether the grant for the previous year had, or had not, been expended. As a matter of national account, this is perplexing and unbusiness-like. It diminishes definite control exerted by the votes. No such public control is rendered possible as would result from a comparison of votes and expenditure. Thus financially it is a very slovenly mode of proceeding. Practically it has yet another disadvantage. We now speak of a somewhat remote time, and of a branch of the Government service to which we have made, and shall make, no more distinct reference; but we speak from personal experience. In that case, as the financial year advanced, we have often known the officials of the Government to urge their contractors to make every effort, in order to justify them, by deliveries, if not by actual work, in sending in certificates for payment that the money might not be "lost." A zealous administrator might, and often did, thus act in the best faith, and with the view at once of expending faithfully the Parliamentary grant, and of keeping down the nominal charge of the work entrusted to him; for which he would be debited, *coram publico*, with all the sums voted, but not debited, *per contra*, with any savings made in the actual expenditure. But the influence of the system is bad. It will be in the interest both of those who seek for information on the cost of the architectural and other works carried on by the Government, and of those who superintend these works, for this anomalous method of keeping accounts to be remedied. More than all, we venture

to hint, may it be to the advantage of the public.

Subject to the above reserve, we find that the total sum expended since 1852, by the Science and Art Department, on buildings, is set down at 208,601*l.*, a figure attained by the close of the year 1869–1870. From this time to 1874–1875, the sums voted for the same buildings have been, for South Kensington new buildings, 149,145*l.*, and Bethnal-green Museum new buildings, 10,122*l.*, making a total of 357,868*l.*, which we conclude must approximately represent the cost of the blocks of buildings at South Kensington, and of the succursal establishment at Bethnal-green.

This, it will be seen, is a large sum. It is one of which it is very desirable that we should have a clear, definite, and exact statement, accompanied by such a plan and description of the buildings erected as will enable the architect to arrive at the cost per square yard of area and per cubic foot of structure. This information is the more desirable from the fact that the buildings in question have been, for the most part, built under the direction of men who, though of undoubted eminence in their own profession, were not regularly educated civil architects. Beyond this, in the buildings in this vicinity, including those which may be taken to form a part of the general system, although the cost of the erection was not defrayed by Parliamentary grants, much reliance was placed on the use of models, instead of regular drawings, for the guidance of the detailed execution of novel designs. For two reasons, therefore, it is important to have definite information as to this large group of buildings. It is becoming, as we shall presently see, each year more important for us to have a thorough practical knowledge of the laws that regulate combined buildings, especially with reference to their cost; and it is further desirable to see whether any gain or any loss, in an economical sense, is obtained by the employment of military in lieu of civil architects. It is hard to say whether these questions are of most importance to the architectural profession or to the tax-paying and house-requiring community.

Besides this sum of nearly 360,000*l.*, 36,735*l.* have been voted since 1870, for the works and buildings of the British Museum; 47,000*l.* for those of the Edinburgh Industrial Museum; and 246,000*l.* for the Natural History Museum. With regard to this last building, the information is particularly vague. The total votes, for five years, amount, as above stated, to 246,000*l.* There is the note to which we also referred as to only 66,286*l.*, having been expended, out of 166,000*l.* voted in four years. The difference of 80,000*l.* is the vote for the current year, out of which we have no means of knowing how much will be expended, and how much will be "lost," not to the nation, but to the apparent credit of the building. As Parliament has already voted 140 per cent. more than the directors of the work have managed to expend, to the close of the last financial year, we are unable to form any estimate how far the 80,000*l.* which is set down to their credit for the current year will be expended, or how far the vote may lapse.

While on this part of the subject, it may be as well to add that the expenditure on all grounds, with the exception of buildings by the Science and Art Department, since 1852, has amounted to 2,736,511*l.*, being at the average rate of 124,366*l.* per annum. For the last five years the ordinary maintenance of the South Kensington, Bethnal-green, and Jermyn-street Museums has cost 40,077*l.* per annum, and 16,970*l.* per annum have been laid out on specimens and books. In the Abstract of Expenditure for the three years ending 1873, 1874, however, only the sum of 40,333*l.* is set down to South Kensington Museum. It may be due to our imperfect acquaintance with the mysteries of return-making that there seems to be here some discrepancy, especially as the charge for 1872–3 is only 34,967*l.*, and that for 1872 is 34,222*l.* But the figures as they stand will not be more intelligible to nine hundred and ninety-nine out of every thousand of our readers than they are to ourselves. They illustrate, at all events, the difference between a reply that may be satisfactory to the various members who move for returns, and that which is of value to architects who are seeking figures for their own guidance, and public writers, who are devoting time and labour to assist them in so doing.

The heads of service under which the expenditure of the Science and Art Department are divided are seventeen. Of these the Science and Art Schools alone cost 104,186*l.* in the year 1873, 1874. South Kensington is the item next in importance. Then comes the line which, no doubt, includes the materials for explaining many apparent discrepancies between the several returns. Services common to the several divisions, 26,505*l.* This is exclusive of the cost of administration of the department, 4,483*l.*, and of "expenses of purchases, circulation," &c., 23,113*l.* The geological survey of the United Kingdom cost 21,010*l.* in the year under review, the total outlay in which, for the department, was 257,788*l.* The sums of 51,815*l.* for salaries, and 51,640*l.* for specimens and books, for the British Museum, are not included in this return. As a strictly educational grant, they raise the total under the two heads united to 361,243*l.* for the year. Here, again, we observe that the Edinburgh Museum for Science and Art is debited with a total charge of 7,510*l.* for maintenance, salaries, and purchases, during the years 1873-74, in Mr. M'Laren's return, and for a total of 9,064*l.*, exclusive of any share in the "services common to the several divisions," in Mr. Sullivan's return. We confess to more difficulty in understanding this difference than we found in the former instances. One thing, however, is tolerably clear,—we are without any plain, full, exhaustive return of the national expenditure for museums, schools, and similar art and educational purposes, as it is commonly incurred under the sanction of Parliamentary votes. It would be a public service if any independent member would move for such a return.

We now come to the definite practical aim with which we first undertook the examination of returns that are not, perhaps, all that could be wished. It is with reference to the relative cost of accommodation in large and small buildings. This is a matter of extreme importance. The provision of dwellings for the artisans, and for the poor, is one of the most perplexed questions that awaits the practical decision of the builder. Every one admits that we must turn over a new leaf in this respect. At the present moment the dwellings of the poorer classes may be grouped in two main divisions, of course with certain noble exceptions. Where the growth of a city has been, not only rapid and continuous, but general, we frequently find that large houses, built probably for opulent traders, and important city magnates, gradually being hemmed in by the growing mass of building, have first suffered in fashion; then fallen into disrepair; and finally, divided into small sub-tenements, or single rooms, have come to resemble a hive of unhealthy inhabitants, rather than a well-designed and well-constructed building. On the other hand, where the growth of population has arisen from the development of some special industry, as in Birmingham and many other manufacturing towns, the rapid demand has called into existence a web of small houses, built with a view of holding a single family each; but built always on the very cheapest plan, often of the least durable materials and workmanship; and possessing, in all cases, the very great disadvantage of covering an acreage altogether disproportionate to the amount of cubic accommodation which that area ought properly to afford.

It may be urged by the orthodox disciples of the *far-niente* school, that the laws of political economy prohibit any meddling with matters of this sort. They should be left to settle themselves. Supply and demand are correlative terms. If good homes are required by the poor, they will be forthcoming. If they are not required, it would be contrary to the principles of political economy to supply them. Rent must be paid in proportion to accommodation, and where rent is not forthcoming, or is inadequate, accommodation must follow the same rule.

It is very imposing to hear doctrines of this clear and peremptory nature laid down by men who give us the idea of being excellent judges of all that most conduces to creature comforts, and of making a practice of availing themselves of the full advantage of that superiority of their judgment. But we confess to being somewhat heretical in the matter. We are not so comfortably convinced as might be desired that it is nothing to us whether our nearest neighbours are well housed, ill housed, or not housed at all. There are a good many,—we hope an increasing number,—of persons who share our own want of true politico-economic education to this extent. Add to these a large number who are under the influence of fright. One man looks at the returns of epidemic diseases, and of increasing death-rate. He thinks it likely to infect his establishment; Lazarus *will* sit on the flags before his door; and if Lazarus points out that he should be happy to go to some spot of his own, so that one is provided for him, and to leave the flags free for the rush of the healthy breeze, Dives,—albeit, with a grumble, not to say a curse,—will put his hand in his pocket to provide the needed refuge. Thus one from a good motive, another from a purely selfish one, very many from mingled motives of undefined human sympathies, make up so numerous a body that we think it is pretty clear that, in spite of the eternal co-relation of demand and supply, Englishmen in the mass will come to the conclusion that the problem of providing decent and reasonable dwellings for the poor shall be looked in the face and practically solved. We need hardly add that the great clearances caused by metropolitan and other railways have been powerful agents in bringing matters to a crisis in this respect.

Here, then, considering the extreme value of land in those localities where accommodation is most urgently required, we come to the question of the best principles on which small tenements and single rooms can be grouped. And here we confess that to our idea the long-established practice of our masters in the building art deserves far more careful attention than it has met with in this country of late years. Since the rise of the monastic orders, the problem has been incessantly proposed to the Italian architect, how best to house a given number of persons, each of whom requires a chamber of absolute privacy—although for certain purposes common apartments serve for the community. It is true that this problem has been simplified by the restriction of the buildings thus required to the habitation of one or other sex. But this very restriction has rendered the subject more easy of study. Nor can there be any doubt that if, by way of experiment, we were to begin by making some model dwelling for several hundred persons of the same sex, there are thousands who would gladly find themselves on the list of candidates for admission.

In fact, the great monasteries and nunneries of Italy, more especially in the southern provinces, present a form of building as to the possibility of introducing which into our great centres of population it is worth while to make some serious inquiry. All that we actually need is to be found in some of these noble buildings. There is permanent protection from excess of weather; the more permanent and the more complete that these great houses must be built so as to resist any moderate shocks of earthquake. There is extreme convenience. There is admirable ventilation. There is every provision for health, for comfort, and for privacy. And within the lofty quadrangle a garden at once charms the eyes and purifies the air.

The considerations that oppose the introduction of this type of building into London are chiefly two. They are sentimental and financial. The latter, to our mind, is that which requires the greatest attention to meet. With regard to the former, we freely admit that the taste of the English people is opposed to that composite style of abode that is so familiar to our memory on the Continent,—not in monasteries alone, but in the great houses of almost every French and Italian city. It may be urged that an attempt, fairly considered and carried out, to introduce the system of "flats" into London has not had such success as to encourage repetition. All this has much truth. On the other hand, can any one contend that if we could offer to five hundred sempstresses, or five hundred young men engaged in mechanical industries, clean, weather-tight, light, warm, ventilated dormitories at something like a penny a night, there would not be numerous applicants? The only serious difficulty, we maintain, is the financial one. And this has two distinct aspects,—the construction and the remuneration.

It is, we suppose, a general, and probably a well-founded, opinion, among those persons who are familiar with buildings, that large, lofty houses, especially when we bear in mind the provisions of the Metropolitan Building Acts, are so much more expensive *per cubic* foot of contents, as to be economically inapplicable to such dwellings as we contemplate. We are not prepared to deny that there is room for such a view, irrespective of the question of ground-rent. But we desire to see the matter discussed, not as the subject of opinion, but on scientific and practical data.

One of the points as to which there is no doubt is, that a roof of immense span costs more per

square than an equal area of smaller roofs. The ratio, in iron roofing, has been held to be that the price per square is in proportion to the square of the span. But this cause of expense need not apply, as there can be no objection to the roofing of such a building as we suggest in very moderate spans and pitches.

Then comes the question of the thickness of the wall. Here the detail becomes too technical to be discussed without plans and drawings. But there is one consideration that should not be left out of sight. Increased cost, laid out in producing increased solidity, does not require proportionate increase of rents. It tells, in one respect, the other way. If, for instance, we build a house that may last for forty or fifty years, and receive 8 per cent. on the outlay by way of rent, a considerable portion of that percentage is not rent, but insurance. It is, or ought to be, a provision to enable the house-owner to renew the building at the time of its natural decay and downfall. But if, by increased solidity, the durability of the house be increased, a lower rent, in proportion to the outlay, will pay the builder. If, instead of having to rebuild *in toto*, say in sixty years,—which would be a long term for much of the house accommodation that is now being run up,—rebuilding would not be requisite for 200 years; and it would require no extravagant outlay to secure this,—5 per cent. might pay better than 8 per cent. in the former case. We have not space to pursue this inquiry further, at the present moment. But we commend the subject to the consideration of our readers; and we recommend the careful collection of such data, with respect to the cost of large public buildings in this country, as compared with the structural advantages and cost of the great conventual buildings in Italy, as may tend to ripen our judgment as to the best method of solving a problem which we can very ill afford to neglect.

SEPIA PAINTING.

It is next to impossible for amateur artists (meaning by that term those who can only pursue art as an occasional recreation) in any way to compete with the work of trained and practised executants in the higher branches of artistic production, such as painting in oil or water-colour. In regard to the latter, this is more the case than ever, now that so much more elaboration of detail, so much more minute imitation of nature, is practised than in the olden days of the art. Amateurs who take up these sections of artistic production must for the most part be content to be judged by a comparative rather than a positive standard, to gain the praise of showing feeling and perception of effect, without expecting that their productions can be accepted as satisfactory when judged by the same rule which is applied to the works of a professed artist, or claim to be hung in an exhibition on the same footing; unless, indeed, in rare and exceptional cases of original genius. But for those who would rather practise a form of art which they can render complete in itself, than hang on the outskirts of a higher and more elaborate art, there are processes which may be considered as especially adapted for amateur work; the chief characteristic of which is that their productions are valuable rather for the general idea and the degree of force with which it is carried out, than for elaborate technical finish.

Of this kind of process drawings in monochrome are the most important element, and few forms of monochrome work are more agreeable in their results, and less taxing in the manner in which those results are arrived at, than sepia sketching. The material presents an agreeable tone, and a certain degree of warmth, without producing a heated effect, and it is one that works readily and easily. In such a medium it is possible for those who have acquired or naturally possess an eye for form and for contrasts of light and shade, but who have little time for hard work in painting, to gain facility in producing studies from nature, or original studies of landscape or other effect, in a form which entails perhaps the maximum of effect in comparison with the labour bestowed,—which is the essential condition of amateur art under such restrictions. Many people of naturally artistic feeling, who are deterred from attempting the difficulties of water-colour, hardly know, perhaps, how much they could do in these simpler mediums, with pleasure both to themselves and others. To such we commend the art of sepia painting, as set forth in a very clear and comprehensive manner in a small book by Mr. R. P. Leitch*, consisting of tenty-four lithographed plates, illustrating progressively the possibilities of sepia painting, and accompanied by brief hints and instructions which show true artistic feeling, and a very exact perception of the capabilities and the limits of this branch of water-colour drawing. Such a book stands on a different footing from works intended to teach water-colour by progressive illustrations. The same author has himself, we believe, published a course of water-colour painting on the same principle, but which we should hardly recommend in the same way, because water-colour cannot, by any possibility, be adequately represented by chromo-lithograph, nor can anything be learnt of it from copying chromos, except in a hard, mannered, and conventional style, which had much better be let alone altogether. But lithography can represent monochrome drawings with almost the effect of the original drawing; especially in regard to what is the best use of sepia painting, the production of broad and free sketches of effect with little attempt at working up detail elaborately. When more than this is attempted, it is often a loss rather than a gain; for when too much realism of detail is aimed at by means of form and shading, the eye begins to demand the realism of colour also to complete the effect; but as long as the drawing only stands as a sketch, suggestive rather than realistic, everything is in its proper place, and the work becomes, if executed in a true spirit, entirely complete and satisfactory as far as it goes.

Mr. Leitch's instructions and hints are entirely in this spirit. In his general remarks, at the outset, he recommends the learner rather to avoid too much attempt at detail, the great charm of sepia painting consisting in the representation of masses of light and shade, "the result of which is breadth. The student must bear in mind that a picture represents the scene as a whole, as it would be impressed on the mind at one glance; and that, under such circumstances, no trifling details would be perceived, but that all the minor parts would be lost in the larger forms, which would again be blended into one harmonious whole, which would be disturbed were the details of any particular part rendered too prominent." In the more detailed instructions the author always keeps prominently forward the fact that painting of this kind is a system of *washes*, not of "outlines"; this is always one of the most difficult things to get into the head of young beginners, and in this view the study of sepia only might be an advantageous preliminary to the higher form of water-colour. At the same time, he is careful to insist on the necessity of accuracy and true perspective in the forms defined by the washes, either by applied colour or "spared-up" lights. The perfection of work of this kind is, in fact, to be able to draw or delineate with the brush alone, without previous outlining. It is only by considerable practice that this could be acquired, however; until it is, outlines must be made, but so as to be capable of complete obliteration, and removed as soon as the subject is defined sufficiently by the first washes of colour. Unless this is done, true aërial effect can never be obtained.

For the rest we leave Mr. Leitch's instructions in sepia painting to speak for themselves, merely adding that we agree entirely in his remarks and principles generally. The only thing for criticism is in the nature and forms of some of the earlier studies given; which are much such as we all know in many "first drawing-books." They serve the purpose of instruction in light and shade and general manipulation as well as anything else, but it is a pity that young students, especially, should be familiarised at the outset with (for instance) bad architectural detail, when good could be as easily drawn, and would give the same instruction in manipulation. Nor are we quite sure of the advantage of confining studies of this kind so much to objects presenting what is supposed to be a picturesque irregularity, that is to say dilapidation, of appearance. Objects of more finished and symmetrical form may be equally good practice in another way, and are often more difficult to draw; and the style of subject we allude to is calculated to give a false impression to the beginner that nothing is worth drawing but what is old and broken and decayed. Of the more advanced studies in the book we can speak with great satisfaction; Nos. xvi., xx., xxii., and xxiv. are especially good. We commend the little book to those who are minded to try a very fascinating form of art, in which much may be done even by those who have no large spaces of time at their disposal for such recreation.

* A Course of Sepia Painting; with twenty-four plates, from designs by R. P. Leitch. Cassell, Petter, & Galpin: London, Paris, and New York.

"THE UNIVERSAL ARTIST."

"He told us that he had been thirty years employing his thoughts for the improvement of human life. He had two large rooms full of wonderful curiosities, and fifty men at work. Some were condensing air into a dry tangible substance, ... others softening marble for pillows and pincushions, others petrifying the hoofs of a living horse. . . . . The artist himself was at that time busy upon two great designs: the first to sow land with chaff, ... the other was by a certain composition, outwardly applied, to prevent the growth of wool upon two young lambs; and he hoped, in a reasonable time, to propagate the breed of naked sheep all over the kingdom."

The Voyage to Laputa.

That this admirable being, who occupied a chair in the grand Academy of Lagado, is still represented in the western portions of Europe, has been recently shown by more than one characteristic effort of criticism. One of his descendants has lately declared in a letter to this journal that "painting and sculpture must dominate before architecture can become a great art"; and to understand this eminently striking assertion it should be remembered that in the academy before mentioned architecture was regarded as a pictorial art, inasmuch as a new method was contrived there for building houses by beginning at the roof and working downwards. But in countries less favoured than the kingdom of Laputa, true architecture has depended for its successful production upon a right and proper start, and upon the maintenance and development of traditions. In France and England the Mediæval master was given a certain problem or scheme, which he solved by the exercise of reason and common sense. He knew nothing of "true principles," and infinitesimally little of the orders of architecture. If, in his own way, he succeeded in accomplishing what the Greek had accomplished fifteen hundred years before, and if an analysis of the two systems proves identity in principle, it is because the minds of men, when they have been absolutely compelled to exercise them, are found to be constituted in pretty much the same fashion, even at different and remote periods of time. As a rule the course of true architecture runs smoothly for centuries; at length a crisis arrives, either political or religious, and the chain of tradition is severed. In the consequent confusion the broken links are scattered, buried, and forgotten. A period of comparative oblivion follows, of which history takes no note. Then a change comes, and the fire of energy is rekindled. A want arises and it is met by the simple exercise of mother wit: hence, the *naïveté* of early examples of what is now designated a style of architecture. The old story is yet new. It has been told in the lifetime of living men, when the sudden introduction of railways created new wants and new means of satisfying them.

The history of art in this country is the history of art in any other. Take a single illustration. When the nobles levied war on each other, and the vassals of one domain were pitted against those of a neighbouring one, it was necessary to command an easy and safe view of a broad expanse of country. Consequently lofty towers rose above the fortifications of a town, and these were as much a useful part of a fortress as battlements and curtain walls; and many a long siege and stout defence rendered them famous in story. At one perhaps a chieftain falls gallantly defending his castle against the foe. His grateful kinsmen wish to perpetuate his memory in some substantial manner; so at the base of the tower, in defence of which he fell, and in a sheltered corner, cunning hands carve his figure on horseback upon the stone wall; or perhaps a statue is prepared and inserted in the wall bordered with harmonious mouldings and covered with a graceful canopy. Then a chapel is built and dedicated to the saint whose day it was on which the chieftain died. Stories of the saint's life and death are painted upon the inside so that good Catholics may learn something of him who is to intercede for them with the Deity. This is art in a simple form, and up to a certain pitch of development it retained its early simplicity. All the arts which ministered to architecture were useful arts; and those of the sculptor and painter were then as necessary to complete

a building as those of the joiner and smith are now. But when Falconbridge the young baron of England, who, according to Portia, had "neither Latin, French, nor Italian," came back from his travels, in an odd suit, he brought with him the original progenitor of the universal artist; and the latter's descendants still buy doublets in Italy, round hose in France, bonnets in Germany, and,—Shade of the Poet, be lenient!—designs everywhere. They refuse to believe that shot and shell have superseded the grey-goose shaft, or that strings of wire are a better means of communication across country than any number of lofty towers. It was probably a son of the original universal artist who adorned some of the English cathedrals with sepulchral four-post monuments; and a great-grandson who "collected" in France and Italy the heads and wings of Cherubim and Seraphim which, their owner dying intestate, were ultimately stuck upon plain English walls. It was surely a member of his family (now nearly 300 years old) who suspended from English ceilings the sprawling saints of Verrio and Laguerre. The Egyptian Hall in Piccadilly, and the Pavilion at Brighton, were undoubtedly inspired by the prolific genius of his later descendants. In every new tower which serves no traditional purpose, in every spire which tells no certain tale, in every crenellated country-house, in every high-pitched roof with flat ceilings under it, in every traceried window with sash frames behind it, in many a new public edifice, in many an elegant drawing-room, the universal artist has had, not a finger, but a whole hand. Against all traditions, except those which have been definitely superseded by new inventions and discoveries, he strenuously sets his face. For him the time is always out of joint. His labours are prodigious, and he does not labour in vain. As far as this country is concerned no stranger can say with confidence whether a work of what ought to be technic art is of recent execution, whether it be brand-new, or a relic of centuries. The universal artist, in spite of all and every one, is pre-eminent; and the result is that in architecture the best new things are those which seem to be what they are not. In painting the result is,—a Royal Academy Exhibition. In sculpture, London. Thanks to the universal artist, instead of a perfect work of art, like Rheims Cathedral, France now produces a National Opera House in which painter and sculptor, regardless of scale or proportion, pile a Pelion upon Ossa of blank statuary and coloured mosaics; and a hundred artistic parallels can be drawn of similarly misdirected energy in this less naturally favoured land.

Nevertheless, it would be idle to ignore the wealth of love which is now expended upon works of painting and sculpture. This wealth a painter encloses in a gilt frame of more than dubious design, while a sculptor sticks his upon an old packing-case covered with red cloth. Each work ultimately goes to fill what is called a gallery: the one to be fitted in like a Chinese puzzle amongst a host of pictures of a totally different and incongruous character; and the other, life-size, and in a frock coat, to be placed between a diminutive Nymph and an Infant Samuel of Herculean muscularity.

It is not too much to assert that few men, however refined in artistic matters, can visit an exhibition of the Royal Academy, the walls of which are papered with pictures, without experiencing a sense of oppression, an incapacity to admire, a dread suspicion of being bored, the whole accompanied with a firm intention of submitting to any mental torture rather than acknowledge the truth. Happily, a catalogue, which is usually studied with more attention than is bestowed on the pictures, affords relief to the jaded eye. A careful observer has but to watch the vacuous stare of casual groups of visitors who have done only three rooms to realise the nature of the conflict which is taking place in their minds. But the sculpture galleries are a still more bitter satire upon the triumph of the fine over the useful arts. The pre-disposition to fly, which seizes upon an educated man when he finds himself face to face with an indiscriminate collection of "subjects" in every uneasy attitude and of all sizes is one result at least of the emancipation of sculpture from the parent art. Yet, so runs the obvious argument, painters and sculptors must exhibit their goods in order to sell them, and a red star becomes the summit of their ambition. Thus, by this singular process, a gentleman, a man of taste, a connoisseur, and travelled citizen of the world, who may have spent thousands of pounds over a new house, in which he has sought to have "everything in keeping," may perhaps be lucky enough to purchase such a pretty picture as that by Mr. Alma-Tadema in this year's exhibition, called the "Water Pets," which he will eventually suspend from a brass-headed nail upon the wall of his dining-room, between a hooded fireplace and a stained glass window!

The present relation of painting and sculpture,—promoted to be fine arts,—with architecture, a useful art,—may certainly warrant such a hypothesis as the following:—Suppose the St. Paul's Decoration Committee were to buy up all the pictures of sacred subjects and all the religious sculptures just exhibited in Burlington House for the purpose of placing them indiscriminately in the metropolitan cathedral, and therewith concealing the present staring baldness of the walls and arcades! Yet that is the way rich connoisseurs and others decorate their houses under the advice of the universal artist; and while this last-named irrepressible person holds sway any palpable change is impossible. There is, however, one man who can drive him from this country, and that is the patron who protects him; for the breed of patrons did not die out, as many suppose, with the great Lord Chesterfield. To such patrons it might be possible to say individually,—"If you have any intention of building a new house, or repairing an old one, spend a little time before doing so in getting up the subject of architecture as it has been explained by M. Viollet-le-Duc in France, and Mr. Fergusson in England, each of whom in remarkably clear language has corroborated the arguments of the other. Above all things, first commit to memory Mr. Fergusson's chapter on 'The Technic and Phonetic Arts.' Try and settle beforehand what you really want, and add, or even pull down, rather than restore. Collect the scraps of your own history, and that of your ancestors, if you happen to know of them; and remember that the smallest, and even a half puerile, incident connected with yourself will be as interesting to your descendants, and perhaps to the world six generations hence, as one six generations old, is now interesting to you. Such incidents form subjects for bas-relief, medallion, and frieze, and it is for you to tell your architect clearly the facts, in order that he may dress them up and frame them artistically. You may have written a book—who has not?—the plot or the substance of it can be rendered in stone or portrayed in colour. You may be a racing man, and the owner of celebrated horses; or a breeder of shorthorns, and famous at cattle-shows. You may be a statesman or a politician, and instrumental in passing certain measures which have contributed to the public good. Then take steps to record these facts upon the walls of your dwelling-house delicately and unostentatiously. Instead of buying 'Infant Samuels,' or pictures of some 'purling stream,' at chance exhibitions, perpetuate rather the remembrance of scenes dear to you, or linked with some association interesting to you and yours; for that is the way in which painting and sculpture appealed to men's minds when appreciation of both was spontaneous; and when architecture, of which both formed a part, was unaffectedly true and homely, and understood as clearly as an open book is at present by all classes of people."

It is happily unnecessary to assert the rights of the parent art over unruly and overgrown offspring. If it be worth while for a juvenile sculptor or painter to exalt his own art at the expense of architecture, some equally juvenile philosopher may rejoin, "*Et que sera donc la philosophie?*" The *Bourgeois-gentilhomme* was not more perplexed than wiser men had they been forced to discriminate between the rival claims of his professors of music, dancing, fencing, and philosophy. Perhaps, however, M. Jourdain may provide an answer to the question of how to rout the universal artist. The former desired to tell a fair Marchioness in the language of true gallantry that "her beautiful eyes made him die of love"; and after all sorts of ingenious transpositions of the same words he was surprised to find that the version which flowed, naturally, from his lips was deemed by his professor of philosophy to be not only the simplest but the best. Since the art traditions of this country were interrupted the forms and fashions of architecture have been transposed only to find out, after centuries of confusion, that the simplest are most befitting the national character. If painters and sculptors can revivify architecture by an ephemeral domination, by all means let them dominate; but they must select different subjects for the brush and chisel than it has long been their wont to do. Fine painters, however, should remember Lord Bacon's words, that "the best part of beauty is that which a picture cannot express." Nor ought the fine sculptor to forget that the efforts of some of his early brethren were made in countries in which naked beauty was and still is to be encountered. A Greek Venus loses some little of its dignity and sentiment when exposed to the inclemencies of a leaden sky. If the painter can afford at times to dispense with artistic surroundings and remain independent of the architecture against which his work reposes, a sculptor surely cannot. If both will study architectural laws they will help their own arts even if they do not raise architecture. Some modern painters of eminence have failed even to draw a round or pointed arch in true perspective, and of late years hardly any British sculptor has succeeded in making a really successful pedestal to support often a less successful statue.

In conclusion, it has been, until very lately, a self-evident proposition that all work of whatever kind must be directed by some one. Common sense has also demonstrated that there is little or nothing in a name. It is of small importance in the building art whether the master-of-the-work be a sculptor, painter, or modern architect, provided he possess knowledge enough to direct the work. Even the universal artist cannot transpose this admission by any "nice derangement of epitaphs"! Although very little is known of the antecedents of mother Earth, it is at least clear to a few who have used their eyes that existing upon its surface are substantial records,—relics of a period of more than two thousand years,—which prove beyond doubt that in works of true architecture painting and sculpture have held a place proper to each; that they have been set therein to tell some cognate tale of history or romance; and that where they have strayed beyond certain limits the general effect of the work has been marred.

> "'Tis not a lip or eye we beauty call,
> But the joint force and full result of all";

and to obtain that "full result" in architecture has depended, and still depends, upon him who, higher than the painter and sculptor, "contributes knowledge but not manual labour."

LYMNE AND THE ROMANS.

At the recent meeting of the Kent Archæological Society, Lymne was visited, and Mr. Roach Smith was called on to describe and account for the massive ruins seen around them. He said the broken and overturned walls formed the castrum or fortress erected by the Romans near the old *Portus Lemanis* to repel the invasions of the Franks and Saxons, who, towards the decline of the Roman Empire, made continual descents upon the nearest parts of the coast of Britain. It constituted one of a series of forts from Brancaster, in Norfolk, to the Adur, in Sussex, a tract called the *Littus Saxonicum*, or Saxon shore, from, as he believed, the aggressions of their forefathers, the Saxons; and not, as some maintain, from their having established settlements; part of the opposite coast of Gaul was also called the Saxon shore. It was by fortresses such as this, connected by roads, and divided only by the Channel from the great military way which led to Rome itself, that Britain was retained so long as an important province of the Roman Empire, supplying precious tribute, and receiving in return arts, sciences, and civilisation. While the *castra* they were now examining (Richborough and Lymne) were of individual importance, yet they must be studied as a part of this great military occupation of Britain, in order to estimate fully, and understand the mechanical means by which the Romans secured their conquests. They belong to the early history of our country, and are indispensable to it, especially in connexion with inscriptions, of which nearly a thousand have just been published by Dr. Bruce in his "Lapidarium Septentrionale," and these are wholly confined to the North of Britain. Among those he (Mr. R. Smith) had the honour of addressing was Mr. Parker, fresh from his valuable researches in Rome, and stored with her grand monuments; yet, he felt convinced, Mr. Parker estimates the remains of Britain as historical evidence, quite as highly as those of Rome itself, infinitely superior as the latter are as works of

art. For the future histories of our country these monuments will supply materials hitherto neglected; but time was limited, and he must confine himself to the place before them. Mr. Roach Smith then proceeded to assign reasons for his conviction that these *castra* on the Saxon shore, are of comparatively late date. One of these is the absence of inscriptions. Those on the line of the Great Wall, which date from the time of Hadrian, as well as the places where the legions were quartered from a more remote time, had supplied many inscriptions of more or less historical value. Not so the fortresses on the Saxon shore. We know from the *Notitia*, a late work, giving a full account of the distribution of the military forces throughout the entire empire, the various bodies which garrisoned them; but we have no lapidary documents to confirm and extend that information. Dover had Tungrian soldiers, drawn probably from the north of Britain, like as the second legion was moved from Carleon to garrison Richborough. Turnacenses, from the region of Tourney, were stationed in the castrum, within the walls of which they were, at that moment, assembled; but at present no records of their doings had been discovered. Yet there has been found during excavations which he and Mr. Elliot had made, some years since, evidence which did not bear upon the station itself so much as upon the *Portus Lemanis*. This was from inscribed tiles, and from an altar. The former were not tiles which had formed the bonding courses of the walls, but they had been used in some of the buildings or barracks within. They were stamped CL.BR. which he (Mr. R. S.) had explained; and the explanation is allowed as meaning "Classiarii Britannici," or British Marines; and similar tile stamps have been found at Dover. The altar was dedicated by a Præfect, or Admiral, of the British Fleet, to some deity whose name had been effaced in consequence of the altar having been brought from the place of its original destination, and used as a foundation-stone of the chief gate. He believed it had been brought, together with the tiles from the *Portus Lemanis*, now filled up and dry ground. Upon it, as well as upon other building stone, were incrustations of marine shells, showing that at a former time they had been submerged in the sea, or subjected to tidal action. The *Portus Lemanis* and its buildings had probably experienced some great change when this castrum was built. Mr. Roach Smith then briefly described the character of the castrum, the buildings inside, and the cause of their overthrow.

Mr. Dowker inquired upon what authority was it concluded that the site indicated was that of the *Portus Lemanis*.

Mr. R. Smith replied, chiefly the Itinerary of Antoninus; and the *Notitia*. The distance from Canterbury as given in the former, by what is now called the Stone-street, confirms it, and the position of the castrum as indicated by the *Notitia*. Concluding with urging the importance of studying the natural features of the country as well as the ancient remains, he directed the attention of his audience to the long-debated and contested question of the landing of Julius Cæsar, observing that having visited Richborough, Sandwich, and Lymne, they would be better qualified after their meeting at Dover to form a correct opinion; and to judge from what Cæsar himself has written, and from the features of the country, as well as the sea coast, whether the flat and open place where he effected a landing was Deal, or Folkestone, or Lymne; and to which place the required river at the foot of high ground, and the distance of sixty miles to the Thames would the better apply.

THE HOUSE OF THE LONDON SCHOOL BOARD.

At the meeting of the Board last week, a statement of the cost of the new offices on the Embankment, designed by Mr. Bodley, was brought up. The site cost 18,552*l.* 8*s.* 8*d.* (inclusive of legal expenses). Three tenders, the aggregate amount of which was 20,473*l.*, were accepted on the 5th February, 30th April, and 28th May, 1873, for putting in the foundations and for erecting the buildings. Finally, on the 8th July, 1874, the committee were instructed to take the necessary steps for "completing the fitting up and furnishing" of the offices. The cost of the fabric of the building has exceeded by 2,741*l.* the amount of the tenders accepted, and the additional 10 per cent. authorised by the Board in the case of all contracts. This excess has been caused by the variations in the original plan which it was found necessary to make during the construction of the building. As to the infringement on the lights of the adjoining owners,—in the case of Messrs. Woodfall & Kinder's claim, the arbitrator appointed under the seal of the Board to determine the compensation to be paid has given his award for 1,200*l.*; and, in the case of Messrs. Gwynne's claim, the committee thought it advisable to agree to a payment of 100*l.* and 21*l.* costs, in order to avoid litigation. The total cost of the site, building, and furniture, with all incidental charges, is 60,423*l.* 19*s.* 5*d.*

For this large expenditure the ratepayers have obtained the ugliest piece of affectation to be found in the neighbourhood,—a flimsy "front" inharmonious and ill-proportioned.

In the course of the discussion which followed the statement as to cost, some of the members eagerly repudiated any responsibility for the building, and one (Mr. Lafone) protested against any expenditure for the decoration of the board-room, which he described as simply insufferable, no one but the chairman, and the chairmen of committees, who sat near him, being able to hear what was going on.

ESTIMATES OF FURTHER RAILWAY EXPENDITURE.

A statement has been issued as to the estimated further expenditure during the next and succeeding half-years which will be required by sixteen of the leading railways, on lines open, on lines constructing, and in working stock, from which it appears that the aggregate sum which will have to be expended in capital for these purposes, amounts to the enormous sum of 34,183,753*l.* The London and North-Western Company stands at the head of the list, the figures showing that its expenditure will be 6,353,846*l.*, of which 2,900,000*l.* will be on lines open, and 3,143,225*l.* on new lines now in course of construction, together with 256,000*l.* on working stock. The Great Northern Company is next in order, their intended expenditure being 4,457,545*l.*, namely, 749,807*l.* on lines open, 3,428,318*l.* on new lines in course of construction, and 279,421*l.* on working stock. The Midland Company follows with an expenditure of 4,081,538*l.*, of which 654,588*l.* is on lines now open, 3,267,950*l.* on new lines in course of construction and 159,000*l.* on working stock. The North-Eastern Company's estimated expenditure is 3,381,262*l.*, of which 565,663*l.* is on lines now open, 2,420,199*l.* on new lines in course of construction, and 395,400*l.* on working stock. The estimated expenditure of the Caledonian Company on these several heads is 2,755,177*l.*; of the Lancashire and Yorkshire Company, 2,702,835*l.*; Great Western, 2,654,255*l.*; Manchester, Sheffield, and Lincolnshire, 2,110,000*l.*; London and South-Western, 987,100*l.*; Great Eastern, 950,000*l.*; Glasgow and South-Western, 782,749*l.*; North British, 602,600*l.*; South-Eastern, 442,720*l.*; London, Chatham, and Dover, 348,130*l.*; London, Brighton, and South Coast, 331,196*l.*; and Bristol and Exeter, 242,800*l.*

ATTACK ON THE EXPLORING PARTY IN THE HOLY LAND.

We referred briefly in our last number to the report which was in circulation as to the attack on Lieutenant Conder, R.E., and his party, engaged in the survey of Palestine, which was said to have taken place at "Japhet," a place unknown to topographers. In the first telegram, dated Constantinople, July 23, it was so uncertain whether it was announced that *nine* of the party were wounded, or that *none* of the party were wounded, that contradicting readings were sent out from Reuter's office. In a subsequent telegram, the same slovenly obscurity prevailed. The word was then spelt NUNE, and there was another word entirely undecipherable.

Further particulars have now been received at the office of the Palestine Exploration Fund; and the honorary secretary, Mr. Grove, has published an account. A full report is also on the way to the Foreign Office, from the Consul at Beyrout. It appears that on the 10th of July a ferocious and entirely unprovoked attack was made on the exploring party by the inhabitants of Safed. The range of the Jebel Safed is the highest ground in Palestine, forming the western limit of the Ghor, a remarkable depression through which the Jordan runs, linking the three lakes of Merom, Gennesaret, and the Dead Sea. The town of Safed, which is conspicuous from a great distance, is considered to be referred to in the Gospels as the "city set upon a hill." The natives are zealous Moslem; and Safed is nearly as holy a part in the north of Palestine as Hebron is accounted in the south. When surveying near Haifa, in 1872, Lieutenant Conder's party was fired on by some of the natives, and considerable precautions were taken on the return of the party to this wild vicinity in the present summer.

The attack appears to have been violent. It was entirely unprovoked. The little party must have been overwhelmed by numbers, but for the arrival of the Turkish troops. Lieut. Conder then retired to Haifa, with eight of his party wounded. Malaria fever has also attacked the officer in command, but on the 1st of August all were reported as doing well.

The consul reports that measures are taken for the arrest and punishment of the assailants. The Foreign Office has taken the matter in hand. We hope that a proper compensation to the wounded will be insisted on by Lord Derby. Such a step will prove of far more service in the protection of English travellers and official residents in the East than any amount of personal chastisement inflicted on the ringleaders. It is quite consistent with Oriental habits to yield up the individual denounced, to prison, bastinado, or anything else. Such a description of punishment will be regarded with little interest,—except by the ruffians themselves. But an adequate fine imposed on the district will come home to every inhabitant. It will strike far more alarm through Syria and Turkey than any other description or means of redress can do. And it will do much to restore the English prestige, and to prevent Englishmen who are exposed to danger in Mohammedan countries from envying those Europeans who enjoy the protection of the French, the German, or the American flags, which is at present but too notoriously the case.

SALE OF CHALK LANDS AND CEMENT BEDS.

A numerous company connected with the manufacture of cement, and those belonging to building pursuits, was present at the Mart, Tokenhouse Yard, on Thursday week, when the Stone Court estate at Greenhithe, on the banks of the Thames, containing an area of 99 acres, was offered for sale by auction, by Messrs. Fuller, Horsey, Son, & Co. The property was described as containing a most valuable tract of chalk land, with beds of cement, mud, sand, and gravel. The quality of the chalk was said to be of the best description, and a large trade was now being done in supplying chalk to cement manufacturers. A bed of sand and gravel, extending over about eight acres, having a depth of 30 ft. above the chalk, had been opened. The sand was a sharp grit, available for building purposes, and was now said to be commanding a large sale. Adjacent to the river 28 acres of the land contained a natural deposit of excellent cement mud, equal to the Medway mud deposit, so that all the requisites for the manufacture of Portland cement on a large scale were on the property. It was further stated that a pier and a railway 1,200 yards in length had been constructed on the estate at an outlay of 20,000*l.* Mr. Horsey, the auctioneer, made an explanatory statement as to the great value of the property for the manufacture of cement, and for other purposes. He stated that he valued the property at 78,000*l.* as a minimum, and he endeavoured to show that any one who purchased it at that price would realise from it an annual income of 5,000*l.* a year at the least. The biddings then commenced, the first offer made being 50,000*l.*, and by advances of 500*l.* at each bidding the property was rapidly run up to 67,000*l.*, when the biddings slackened. Ultimately, the property was bought in, as there was no further advance beyond 67,000*l.*, but it was stated in the room afterwards that the property had been purchased privately for over 70,000*l.*

Gloucester.—The enlargement of the rectory-house of St. Michael's, in this city, has been commenced. The residence will be extended by the addition of a wing in the ground occupied as a nursery by Mr. J. Bond. Mr. Albert Estcourt is the builder, and Messrs. Waller & Son are the architects.

GRINLING GIBBONS AND HIS WORKS.

The early life of Grinling Gibbons affords a notable example of the irrepressibility of genius. He studied under no great master, he received no elementary instruction from a school of art, and yet Evelyn found him in a cottage near Sayes-court, Deptford, copying in wood, with exquisite taste and skill, an engraving of Tintoretto's "Crucifixion."

Contrary to the generally received opinion, the great carver was born at Rotterdam, April 4th, 1648, and not in Spur-alley, in the Strand. This fact was placed beyond a doubt by the discovery by Mr. Black of his horoscope among the Ashmolean MSS., at Oxford, cast by Elias Ashmole himself. There was a Simon Gibbons employed as a carpenter by Inigo Jones, who may have been his father.

Evelyn, June 18, 1671, introduced "the incomparable young man," as he calls Gibbons, to Charles II., and thinking the subject of the carving from Tintoretto would please the Queen, showed it to her Majesty. She would have purchased it, had not one of her attendants made deprecatory remarks, and the carving was taken away, and its present possessor is not known. One other carving of a like character, happily in existence, was purchased by Charles II. It represents the "Stoning of Stephen," and the seventy figures are remarkable for their artistic feeling. The architectural portions of the design and other subsidiary features are of exquisite character, and, unlike Gibbons's carvings in general, this superb work of art is in perfect preservation. Charles II. presented the carving to the Duchess of Chandos, and it was taken to Cannons, in Hertfordshire. That mansion was pulled down a hundred and fifty years ago, and the carving was purchased by Mr. J. Gore, who placed it in his house at Enfield. His descendant, Mr. J. Gurdon Rebow, removed it to Wyvenhoe Park, near Colchester, where it still remains,—the most important Gibbons carving in existence.

We now turn to the carvings executed in his distinctive style,—fruits, flowers, game, &c., among richly-diversified foliage. Fortunately, many examples exist in the mansions of England to testify to his matchless variety of treatment. Few data enable us to mention these in their chronological sequence, but we will notice those first the dates of which have been ascertained.

The carvings at Cashiobury, the seat of the Earl of Essex, were executed *circa* 1675. Evelyn, in his "Diary" (April 16th, 1680), says:—"On the earnest invitation of the Earl of Essex, I went with him in his house at Cassioberie, in Hartfordshire. There are divers faire and good roomes, and excellent carvings by Gibbons, especially the chimney-piece of y^e^ library." Unfortunately these beautiful carvings have been injured by paint and varnish. They were in perfect condition as late as 1835!

The following entry appears in the accounts of works at Windsor (October 1st, 1680, to September 30th, 1682):—"Grinling Gibbons, carver for an extraordinary fine piece of carved work, made and carved by him for his Ma^tie^ and sent by his Ma^tie^ as a present to the Duke of Florence, 150*l*." It appears from the same accounts that he then was in receipt of a pension of 100*l*. per annum. Mr. W. Watkiss Lloyd identified this carving with one now in the Ducal palace at Modena. He says it consists of "fruit, corn, flowers, shells, in great variety, combined and festooned among more ornamental foliation. The centre is formed by a skull, executed with the greatest detail,—a music-book open, with music and words, and musical instruments. From a round linked chain, which passed round the skull, hangs a medallion, with a three-quarter face of the artist, and inscribed "Gibbons, inventor, sculpsit, Londia." So far as we know, this is the only example of Gibbons's work in existence which bears his name and the amount paid for which is ascertained.

To 1684 belongs the altar-piece at St. James's, Piccadilly, Evelyn saw it December 16th of that year, and remarks in his diary, "I went to see the new church at St. James's. Elegantly built. The altar was especially adorned; the white marble enclosure curiously and richly carved; the flowers and garlands about the walls by Mr. Gibbons, in wood; a pelican, with her young at her breast, just over the altar, in the carved compartment and border. There was no altar anywhere, nor has there been any abroad, more handsomely adorned." Two Italian artists were allowed to restore this thirty years ago, and replaced some of Gibbons's work by their own.

In 1685-6 he received 340*l*. 17*s*. 9*d*. for "carving the crown, sceptre, and tassell, with nine bosses of wood over the canopy, and for vallens, festoones, cornishes, and other carved work, for the front of the organ, for the tabernacle and all its relieves, and fourteen figures in the chapel; for a marble holy-water pot, and for a chimney-piece in the Great Bedchamber, and another in the Little Bedchamber," at Whitehall. For carving the great altarpiece of white marble with Arnold Quellin, they finding all materials, he received 1,875*l*. 1*s*. 8*d*. Ten years after the altarpiece was taken to Hampton Court, Gibbons receiving 130*l*. for its removal.

From October, 1691, to March, 1696, Gibbons received 839*l*. 0*s*. 4*d*. for "work done in the new gallery building, in the king's great and little closets, in three rooms under the king's apartment, in the king's gallery, and other places," at Kensington.

To the last decade of the seventeenth century belong the carvings in the Cedar Chapel, Chatsworth. On the high authority of Mr. W. G. Rogers we ascribe these to him; but it is perfectly certain that the beautiful carvings in the State dining-room, though usually assigned to Gibbons, are not by him; for in the original book of work is a memorandum of agreement, dated September 9th, 1692, by which Joel Lobb, William Davies, and Samuel Watson, for the sum of 400*l*. agreed to execute in lime-wood "the carving of the great chamber, to be done equal to anything of the kind before executed," and not only so, some of Watson's designs are preserved (Hall & Jewitt's, "Stately Houses of England," p. 368). At any rate, these works are worthy of Gibbons.

We have seen how busy Gibbons was elsewhere about that period, and it is probable he came little to Chatsworth, but found time to prepare the Cedar Chapel carvings in London. Considerable sums are charged in the books of account for carriage of "carved work," &c., from London, and it is only in this way that we can account for his name being traditionally connected with Chatsworth. There is one piece which must be mentioned, carved in a style in which Gibbons is known to have excelled. By common consent the carving,—a cravat of point-lace, a woodcock, medal, and foliage,—is called his masterpiece. It is preserved in the State dressing-room, and Walpole says Grinling presented it to the duke when he had finished the carvings which he executed at Chatsworth.

Before noticing carvings, to which no dates can be assigned, we may observe that he executed in marble the statue of Charles II. for the Royal Exchange; the tomb of Baptist Noel, Viscount Camden at Exton, Rutlandshire (cost 1,000*l*.); the font at St. James's, Piccadilly; and probably that of St. Margaret's, Lothbury.

The beautiful carvings at St. Paul's belong to the concluding period of his working life,—the reign of Queen Anne,—at whose accession he was fifty-four years of age. Mr. Boutell, in a paper in the *Art Journal*, Jan., 1865, illustrated by beautiful engravings of these carvings, observes that they may be classed in five divisions,—flowers and foliage in naturalistic combination; panels of arabesque design, with strictly conventional foliage; mouldings in which foliated members of the design are more prominent; carvings enriching architectural construction; and, lastly, combinations of all these varieties. We commend these remarks to students,—"Our carvers of wood require long, profound, and thoughtful study of the conventional, and also of the natural, in their art. They need to observe what effects result from every modification of natural treatment, from every combination of natural with artificial and conventionalised forms, and also from the direct action of positive conventionalism, and this observation must extend to treatment, to execution, and touch, and finish, as well as to design, and composition, and aggroupment." Malcolm has a curious account of the payments made to Gibbons for his work at St. Paul's (iii. 105). It appears that he received altogether 1,337*l*. 7*s*. 5*d*.

The chapel at Trinity College, Oxford, contains the finest Gibbons's work in either university. This exquisite work, executed in lime and cedar, has in some parts been painted, and in others treated with an undrying oil. Skelton, in his work on Oxford, engraves two inferior carved pendants instead of the exquisite work at the east end. The chapel was built in 1691, and consecrated three years after. The library at Queen's College, Oxford has good carving in Norway oak attributed to Gibbons. A good deal of the delicate work enriching the presses has been injured from its exposed situation.

The projecting bookcases at Trinity College Library, Cambridge, are enriched with carvings in lime by Gibbons. Of better character are the panels at the end of the gallery, the door-heads, and arched recesses. But all these appear to have been painted, and indications are not wanting to show that the imprisoned insects are working sad havoc within.

At Kirtlington Park, Oxford, the seat of Sir H. W. Dashwood, bart., Mr. Rogers found two of the largest Gibbons's panels he had ever seen. One of these, in the great hall, are from 5 ft. to 6 ft. square,—a fine composition of dead birds, fish, shells, and wild flowers. Mr. Rogers's experienced eye saw that the insects within were reducing this work of art to rottenness. On the grand staircase is another panel having a basket of flowers and fruit, with side pendants, about 5 ft. by 4 ft. There are other carvings by Gibbons in this house.

The carved dining-room at Petworth House is enriched with a superb series of carvings. This room is 60 ft. by 24 ft., and is, as Walpole wrote to Montague, August, 1749, "gloriously flounced all round with whole-length pictures, with much the finest carving of Gibbons, that ever my eyes beheld. There are birds absolutely feathered; and two antique vases, with basreliefs as perfect and beautiful as if they were carved by a Grecian master." It is stated that Selden, one of Gibbons's assistants, lost his life in saving the carvings when the house was on fire. Ritson restored them about forty years ago. These carvings are in Gibbons's best, or naturalistic, manner, and the rich festoons of fruit, flowers, shells, birds, &c., hang between the pictures in this magnificent apartment.

A good deal of Gibbons's work is scattered over the rooms at Lyme Hall, near Disley,—a house rebuilt by Sir C. Wren. It is in the style of that master, but as there is a tradition that it was executed by persons employed at Chatsworth, it may have been done by Watson and his assistants. The rich series at Belton House (Earl Brownlow's) were restored by Mr. Rogers in 1855, or ten years before he similarly treated those at Chatsworth. In this paper we have only alluded to typical examples. Other mansions,—as Sudbury Hall, Derbyshire, and Melbury House, near Dorchester,—have good specimens of the great master.

The reredos of St. Nicholas's, Abchurch-lane, having large masses of festoons and pendants of fruits and flowers, has been painted over in the same way as the work at St. James's, Piccadilly, and other places. The enrichments in the hall of the College of Arms were undoubtedly executed by Gibbons, for his receipts for the various payments are preserved there. We may also mention that Mr. Newdegate has his original accounts for the carvings done at Harefield Church.

The carvings from 108, Cheapside,—Sir Edward Waldo's house,—were purchased in 1861 by Mr. M. C. Jones, of Gungrog, near Welshpool, and fitted up in that place. Mr. Jones has written a pamphlet in which he attempts to prove,—and, I think, with success,—that they were the work of Gibbons. They are remarkably like the Heralds' College carvings, and the house was built between 1669 and 1672. One of the most recent works of the late Mr. W. G. Rogers was a sideboard to place in the room filled up with the carvings at Gungrog. The back has a scene representing Charles II. knighting Sir E. Waldo on the occasion of his visit to the City in 1677.

Two examples of Gibbons's exquisite point-lace work, besides the example at Chatsworth, are in existence. The finest of these graced Horace Walpole's collection at Strawberry Hill, and is now in the possession of the Baroness Burdett-Coutts. Mr. Rogers found another specimen at Cullen House, Banffshire.

When at the height of his fame Gibbons was appointed by George I. his master carver at the munificent salary of 30*l*. per annum! The great carver died August 10, 1720. He had nine children, but it does not appear that any followed in the artistic footsteps of their father.

John Piggot, F.S.A.

Monument to Clarkson.—Wisbeach is about to erect a memorial of Clarkson, who was born there,—a tardy tribute, but better late than never. A design for it has been obtained from Sir G. G. Scott.

THE PRESERVATION OF OLD MONUMENTS, AND WHAT TO AVOID.

"Better late than never," is, certainly, speaking ever so generally, a most capital proverb, and when cited specially, it is sometimes found to be more than ever to be commended, and, if possible, acted out and practically illustrated. And right fortunate it is when it is uttered in time. Never was it more to the purpose, or was it more to be desired in its practical applicability than at this moment, when the attention of the British world of art, at least, is being powerfully, and in many ways, called to the important subject of the "preservation" of our ancient monuments and memorials of past times. It would be quite impossible to overrate the importance of this movement; and there may be further good done, and the *progress* of the good work urged, by a glance at, and a few thoughts on, some of the less understood phases of this subject of our ancient monuments and practical deeds and works of our forefathers,—of those who have preceded us in life's race. What is an "old monument"? Is it better or worse than a *new* monument? for monumental and memorial work is always and perpetually going on, and what is new to-day is old to-morrow, or next year, or next century. And why should it be desirable to perpetuate an old memorial, and one of past times, and modes of thought, and action, and work? Questions worth a little cogitation.

So important, indeed, is this problem of the preservation of old things, and even of the *sites*, in which they have been found, and on which deeds have been done, thus making of the mere ground itself an antiquity, and, old as it is, more ancient still; that we have been usefully reminded by a great authority that the greatest of antagonisms have been those which have been aroused by the highest and deepest sentiments by such, indeed, as are associated with the "antiquities" either of race or society; and certainly not least, though it may be last, of those "material antiquities" which remain to us, or ought to have remained to us, in the shape and semblance of memorials in stone. Sacred spots must needs have sacred stones,—marble or limestone. What would the world be were these all to suddenly crumble into dust, and to disappear? In this metropolis it is affirmed, there are antiquities, memories of the past, daily dug up, only to be buried again, or destroyed; but that even as this is, there will be enough remaining for the curiosity of many future ages. Not a corner of this island but in it, or near to it, may be found remains,—memories in earth or stone, quite enough to feed the antiquarian proclivities of most men.

It would be a right curious subject of inquiry to find out, with any certain approach to accuracy, which among the many yet existing remains in these islands, is the "oldest memorial." Where and which is the oldest and first built-up stone or earth mound, of stable form and dimensions, erected by the spirit and hand of man here in these islands, and who were they who built it up, and what was it for, and why was it done? Who was its superintending architect? and what "precedent" had he, if any? If none, how did he get to work?

These considerations, and such as these, are well worth the thought of those who will one day,—almost too late, we fear, in many cases,—legislate to "preserve" our old memorials of the past, or such of them as can now, after so much injury has been done, be cared for. We should be disposed, considering how important an influence even words have on human actions, to substitute for the phrase "preservation" of old memorials: the clearer idea, however conveyed, of letting them alone, or fencing them round. A most momentous consideration is this if we but come to think of it with any sufficient attention. Not a few thoughts come before us as we look into the subject-matter of it. All know how the word and idea of Restoration have been the subjects of controversy for a long time, and how far pushed to extremes has been the idea of "restoring" ancient remains, and moments of the dead past; and how not a few of them have thereby been utterly and for ever blotted out and destroyed!

Stonehenge, even, to begin with, the roughest and hugest and most mysterious, has been proposed for restoration! From Stonehenge downwards, where is the monument which has not yet been at least threatened with restoration? That the restoration days have passed away we cannot affirm; but the force which the idea once had is lessened, and the word and idea of preservation are gradually and surely, though somewhat slowly, taking its place. To preserve our national antiquities is now the aim of many who but a few years back would hardly have cared to meddle with the subject at all. But, "better late than never."

There are so many aspects in which this now momentous subject may be looked at, that we hardly know which of them is the most pressing and most needful of thoughtful care and consideration. We had almost come to the conclusion that the one thing most needful of pressing on the consideration of those who are likely to be the most active in this matter when we have a "law" will, and needs must, be a clear definition, of hard though perhaps popular and well-known terms and phrases. The very *word* "preservation," to wit, is a long word, and admits, as far as old things are concerned, a multitude of meanings. What is it, for example, to *preserve* the remains of an old Norman castle or keep, or an old abbey wall, and two or three straggling columns, supposing such to be found somewhere or other intact, and just as time and the elements have mercifully left them, half-buried, it may be, in accumulated and heaped-up earth, with weeds and rank grass everywhere about them? In such a state as this it seems almost a pity to in any way disturb them or to touch them. Time and the elements have done their work wholly, almost like living intelligences. It has taken old Father Time some centuries, may be, to accomplish his task, and he took it up as soon,—the very same day,—as the human and caretaking occupants of the place left it or were driven from it. Time here was the second workman, and has done his own work in his own way, and it seems almost a sacrilege to disturb it. Some will urge the digging out of moulded plinths, pavements, *et hoc genus omne*, and to get sight of even methods of foundation building; and it may be hard to dispute with them. We are inclined to think that much should be left to the "imaginative faculty," and to the fact of such ruin being left to show itself to be what it really is,—a ruin and nothing else, either more or less. The hand of time, ever at work here as everywhere, has been the workman, and made the thing what it is; and it is his work, in addition to the purely human work that rouses the souls and thoughtful faculties of those who wander to the spot to gaze upon the twofold work. If indeed anything in the way of real restoration is to be done, and the place again sought to be reinhabited and built up again, and made again humanly useful, why then Time's work must needs be itself destroyed, and the human workman become again master. It is not a little easy, and perhaps tempting to do too much, and in the very effort to take care of the old monuments, and to exhibit them, there is no small fear of the very monument or past memorial itself being lost in the careful and well-looked-after surroundings of the place whereon it stands. Mentally and poetically this is to blot it out, and it would be almost better to do as was always done in days gone by, viz., to pull down and do away with altogether, and to build up again in the style of the hour and day, a new building, making all convenient use of the old and worn materials. This was the case at York, as elsewhere, when the old Norman materials, carved work included, were built into the new Early English work.

But of all the truly unfortunate ways whereby an old monument, wherever it is, may be marred, and the romance of it taken well out of it, it is by the process of taking too much and over care of it, and by, "so to phrase it, "cultivating" it. This is worth noting by those who are interested. At the good and archiepiscopal city of York there are the remains of St. Mary's Abbey, quite enough of the old work to well indicate what a goodly pile of architecture the Abbey once on a time was, before "improvements," and before time's work had been so far blotted out. It must have been sufficiently striking and impressive. These ruins are not, it is true, "restored," but the ground in and about them has been smoothed and levelled, and, as far as is possible, converted into a small and neatly-arranged garden, with flower-beds, gravel walks, and neatly-divided plots. Nothing, as it would seem, can be better, and with, in addition, garden seats at convenient spots from which to gaze upon, and, if you like, to sketch the ruins of the old Abbey. Most surely nothing could well be done more effectually calculated to destroy at a blow all idea of a ruined and depopulated building, and to eliminate from the spot all sense of its being deserted by its once teeming occupants. A ruin surely while it is a ruin should be left to show itself as such, and no attempt made to make of it anything but what it is. The charm and poetry of it lie in its very desolation, and in the sense of its very wasted strength, and the way in which nature comes in and occupies the desolate spot, and sows in her own wayward way,—so inexpressively attractive always,—the "weeds" and grass. It is not most surely to be bettered by the sweeping all these away.

Among these, and perhaps not a few other cautions, there is one other not a little worth taking to heart. We may even wonder that any caution can be required. We allude to the cultivation, for it amounts to that in not a few instances that we could name, of that wonderfully picturesque plant—ivy!—poetical, picturesque, architectural, and all that is good. But you may have always too much even of a good thing, and you may certainly have far too much of "ivy." It may totally conceal the very ruin, or building, it was meant to add a charm to. We well remember a fine ruin, or rather a bit of one, in the Isle of Wight, so entirely smothered with ivy that it was impossible, without pulling a portion of it aside to see what was beneath it, whether stone, or some artificial Vauxhall Gardens construction, purposely built up to support the huge mass of green leaves. It would be, as we take it, impossible to do a worse thing than to over "cultivate" such a plant as ivy. It requires not a little restraint and occasional pruning, or rather cutting away, to prevent its getting the entire mastery, and fairly burying the building or ruin outright.

We have thus thrown together a few hints on this important subject, and can but earnestly hope that good will come of the present desire to care for and mentally utilise our ancient memorials,—memories of the dead past, and of those who once lived and acted out their part, at times so manfully and so well, in this world's work and life. They have surely left a something behind them, and we are bound to care judiciously for it.

THE BASILICA OF ST. CLEMENT, ROME.*

We come now to the description of the basilica itself, from which we omit, at any rate for the present, all accounts of the frescoes, as they are not technical and somewhat fulsome.

"The basilica consists of a nave, two aisles, and a narthex. Its entire length is 146 ft. The nave is 53 ft. 3½ in. wide; the width of the northern aisle is 18 ft. 6 in., and that of the southern 13 ft. 10 in.; the narthex, which runs the whole width of the church is 91 ft. 8 in. From the narthex we enter the north aisle, which is divided from the nave by a line of seven columns of various marbles, embedded in a wall built for the most part of the *débris* of ruined temples and broken statues. These columns are 12 ft. high and 1 ft. 6 in. in diameter; and all stand in their original positions. The first, of *verde antique* is of marvellous beauty, and very remarkable for its vermilion spots, varying its surface of vivid green and pure white; it is considered a unique specimen of its kind in Italy. The second is Parian; the third and fourth are Numidian marble; two others are of Oriental granite, and the seventh of *settebasi* of the rarest quality. Some of these pillars have been stripped of their capitals, others retain them, and, although all are valuable and beautiful, they lack uniformity both in height and diameter, which shows that they must have been taken from still older edifices, perhaps porticoes of Pagan temples. Springing from these columns are arches of early construction, supporting the northern wall of the upper church. The columns seem to stand on a uniform plinth, running along the aisle, but in fact, it is a brick wall of the Imperial period." The remainder of this chapter is chiefly theological. In Chapter III., leaving the descriptions of the pictures, with the meditations thereon, we find the following most interesting narration:—"Under this" (the Tribune) "as well as under the southern aisle, several chambers have been discovered, and are supposed to be some of the original chambers of Clement's house. Only three of them have been as yet partially explored. When the excavations reached the west end of the north aisle, it was found that this ancient basilica stands on the ruins of much earlier structures. Observing that the lower part of the west wall was built of

* See p. 683, *ante*.

a quality of brick far superior to that above it, the ground was dug to a depth of 14 ft. and three walls of three different constructions as well as of three different periods were discovered. One is of the finest brickwork of the Imperial times, and probably belonged to Clement's palace. It forms, as it were, the chord of the apse. Parallel with it, leaving a space of only 2 ft. 1 in. is another wall of *tufo lithoide*, which is very probably part of the walls of Servius Tullius, the sixth king of Rome. Upon this is built another, of the Republican period, of colossal blocks of travertine, varying in length from 8 ft. to 10 ft. These walls have been traced 98 ft. from north to south; from east to west the travertine wall was traced 410 ft., and the *tufo* wall upwards of 500 ft., without finding its termination either way. A depth of about 20 ft. is still buried in the earth, which shows how low the level of Rome of the kings must have been. A thorough exploration of the length and depth of these walls could not fail to throw great light on the topography of this quarter of Rome. Ascending from the intermural passage, just described, to the west end of the south aisle, and turning to the right we find a spacious staircase of twenty steps, constructed for easy access to the rooms of a fine Roman dwelling-house. Its walls are of Imperial brickwork, and the style of the stucco decorations on the vault induces us to assign them to the age of St. Clement. This chamber is precisely under the tribune of the basilica. In fact, it occupies almost the same position under the high altar as the Confession of St. Peter does in the Vatican basilica, so that there can be little doubt but that it is the *memoria* mentioned by St. Jerome in his notice of St. Clement written towards the end of the fourth century." A few pages further on we read, "Just beyond the apse of the basilica, the side wall of the *memoria* showed three arches filled up with excellent brickwork, and embedded in it two pilasters of Parian marble. These pilasters have debased Corinthian capitals contrasting strongly with the Classical style of the stucco vault. The roughly-chiselled foliage reminds one of the arch of Gallienus: it shows declining art, and was not executed till the beginning of the third century. Breaking through the brickwork, we found a long narrow passage, 28 ft. by 6 ft. 10 in. A few inches beyond the pilasters is a fragment of a large column of Numidian marble sunk into the pavement. Opposite to this was a doorway, also bricked up. On breaking through it a large hall was discovered 30 ft. long, 20 ft. wide, and almost entirely filled with earth. The first impression was that this was the real oratory, the vestibule answering to the *ambulacrum* intersecting the well-known basilica in the Catacombs of St. Agnese, and, as in that basilica, the smaller chamber under the apse constituting the part reserved for the altar. The circumstance also that there had been a door at the extreme end strengthened the idea. The vault was pierced by eleven *luminaria*, or skylights, some round, some square, and all decorated with mosaics. Mosaic bands also run round the sides and at the ends. The simplicity of the decorations and the absence of Pagan forms, gave strength to the conviction that it was the first Christian oratory. Much of the ceiling, however, was made of small stones artificially imitating a grotto; and when the whole was cleared out, as we see it, there remained no doubt that it was one of those caverns in which Mithras, whose altar had been already found, was habitually worshipped. It was evident that it was not originally a Mithraic cave, but a large room changed and adapted to the Mithraic mysteries. At Ostia, the Emperor Commodus gave up the palace crypt to the priests of Mithras. The like had been done here. Along the walls were raised platforms ascended by three steps. They have been found in other Mithræums, but here there is a peculiarity: they are not level, but form an inclined plane toward the walls. They are 6 ft. wide and 3 ft. 3 in. from the ground. It is difficult to say for what purpose they served. They may have been occupied by the initiated in the mysteries; or, as De Rossi thinks, they were *triclinia* on which the guests reclined while participating in some sacred feast held in this cave, which is by no means improbable; for in the Mithraic mysteries there was a profane imitation of the Sacrament of the blessed Eucharist. Along the outward extremity of these benches there is a depressed edge on which are five semicircular niches, two on the right hand and three on the left. They were formerly covered with marble, fragments of which still remain. In the Mithræum discovered a few years ago at Ostia, there is a similar edge, on which were placed lamps, fire-vases, and small altars of terra-cotta. The five semicular niches probably contained the figures or statues called *signa sacrorum*, symbolising the five grades of initiation into the Mythraic mysteries, to which we shall hereafter refer. High up in the wall, at the end of this temple, is a niche, which formerly must have contained a statue of Mithras, and lower down is a small square cavity, built of brick. It might have contained water for religious purification, or perhaps served as a receptacle for the blood of victims. Near it, on the floor, there still remains a portion of an altar, and a few inches in front a small round piece of marble, upon which, it is supposed, burned the sacred fire that was kindled and preserved in the two small square furnaces, facing each other, in the sides of the benches. The learned Cavaliere Visconti thinks that the round piece of marble we are just after noticing served as a pedestal for the conical-shaped stone that was found here, representing the birth of Mithras; 'for,' as Layard and others write, 'owing to the comparison between him and his symbol, fire, it was said that he had been generated from a stone, from the fact that a spark is produced by striking two flints together. Mithras, therefore, was called Θεος εκ πετρος, and hence the stone itself was called his mother. This statue is 25 in. high. The deity, from his knees upwards, has emerged from the stone. He stands erect, and wears the Phrygian cap. The arms from the elbow are wanting. It was broken into three pieces, which were found at various periods during the progress of the excavations, and is the only one of the kind in Italy.

Near the pilasters already alluded to, was discovered the ara or altar, now placed on the floor in the centre of the Mithræum. The upper part of it, on which probably was represented the chariots of the rising and setting sun, and the symbols of the seven constellations, is quite gone. It is of Parian marble, and, in its mutilated state, is 4 ft. high, 2 ft. 5 in. across the front and back, and 20 in. along the side. On the front of it is the background of a grotto, in the centre of which is the *taurobolium* or sacrifice of the bull. Mithras is clad in a short tunic with his clamys fluttering over his left shoulder. He wears the Phrygian cap, and is looking earnestly towards the heavens. He has his left knee on the bull stretched on the ground before him, and while he holds him by the nostrils with his left hand, he plunges a dagger into his shoulder with his right. A dog and serpent lick the blood that flows trickling from the wound, and a scorpion gnaws the scrotum. The tail of the bull ends with ears of corn. Two genii, clothed like Mithras, stand as his assistants, one with his torch erect to indicate the rising sun, and the other with his torch depressed to indicate his setting. On the edges of the upper part of the grotto, to the right and left are fragmentary figures of the sun and moon, and within it is a raven. Low down, on the right of the spectator, is the head of a lion, which, so far as we know, has not been, as yet, found on any other monument representing the *taurobolium*."

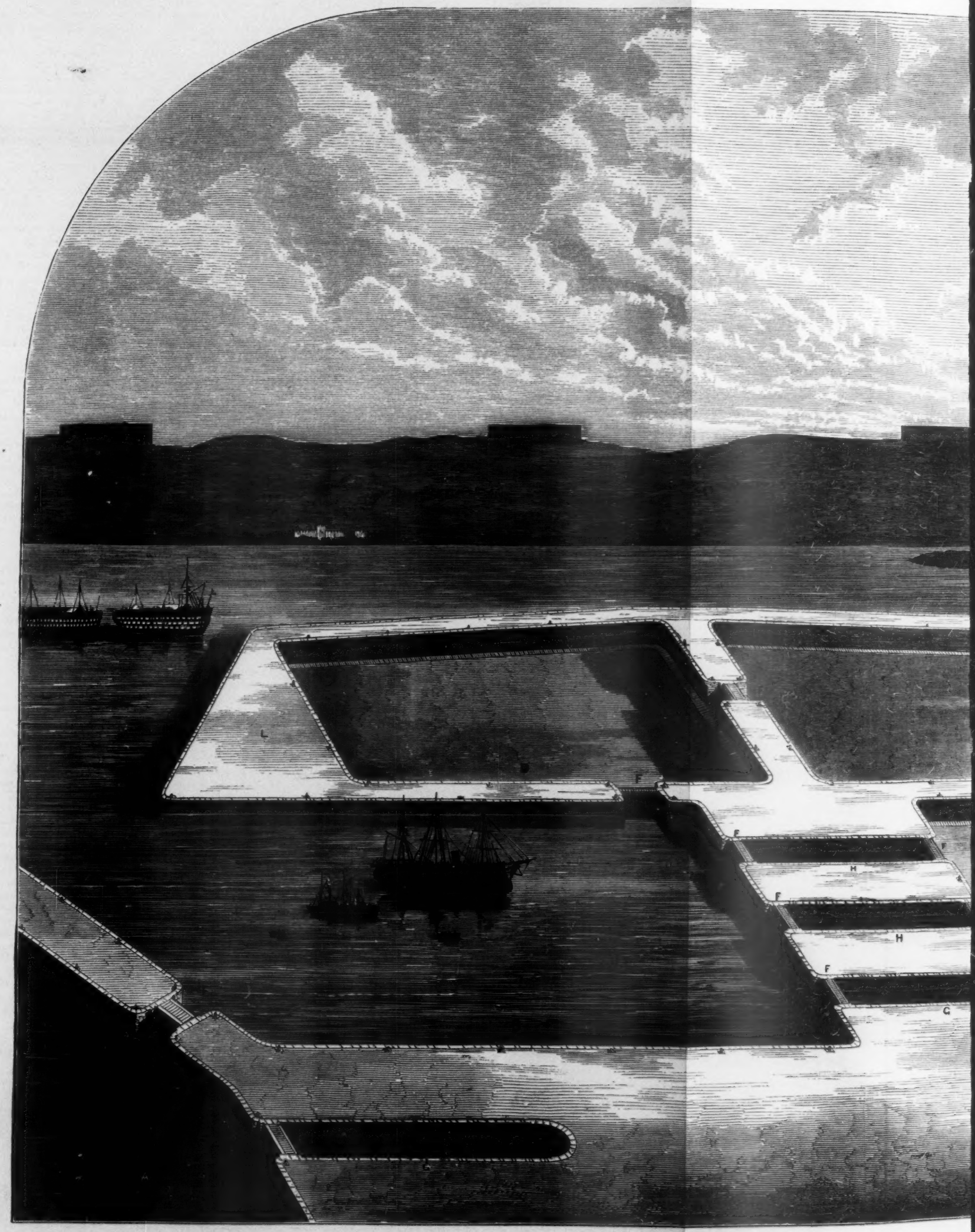
The following twenty pages are given to a most learned exposition of Mithraic worship, from which it appears that this religion, which was in its essence a deification of nature, was first introduced into Italy by the fleet of Pompey, when it returned to Ostia in 687 A.U.C., after having finally defeated the pirates of Cilicia; but that it was not well known until the second century A.D. The system was derived from the Persians who worship the sun under the title of Zor-Aster, and they on their part derived it from the Chaldean Magi. Mithras, whose symbol was fire, and who was supreme in the movable planets, was a mediator between man and Hormisdas,—the benignant deity,—and his principal work was to offer an expiatory sacrifice for the human race. The Romans confounded Mithras with the sun, as we learn from the inscriptions on the altars and marbles dedicated to him, in which he is invariably called,—"Deus sol invictus Mithra—Soli invicto Mithræ." In the reign of Adrian, the worship of the sun was substituted for that of all the gods; but it was from the end of the third to the middle of the fourth century that it obtained its greatest number of adherents, and was practised alike by Pagans and Neoplatonists, who endeavoured to demonstrate that it had been the primitive religion of mankind. Strange were its mysteries. If we turn back some fifty pages we read that in 394,—"In the temples of Alexandria, the crue mysteries of Mithras were discovered, and in the secret *adyta* the heads of many children which had been cut off, mangled, and superstitiously painted." They seem, too, to have practised a species of vivisection, though not for scientific purposes, and to have immolated human beings that they might inspect their bowels for the purposes of divination.

Contrary to our intention, we will quote the description of one fresco, as it shows, in the clearest manner that even in those primitve times the superintendence of a building was *literally* enough to make a saint swear. "In the lowest compartment there are four figures, one of which is in the attitude of giving instructions to the others, who are engaged in dragging a column, and each has his name written near him. . . . . Three are clad in the short tunic which is the badge of servitude. Sicinius wears the toga, and is addressing the men in the following terms:—'Get behind the column, Carvoncelle, with a lever. Albertel, draw it up. Whoresons, draw it up.' This compartment may, perhaps, have some allusion to the building of the Church of S. Clemente."

The following brings us to the end of this section:—"Inserted in the wall of the narthex are several inscriptions, and fragments of inscriptions, some of which are pagan, and others Christian; also exquisitely sculptured capitals, divers pieces of broken columns, fragments of marble candlesticks, ornamental sculpture, pieces of mosaic pavement, and tiles with the names of the makers and the consuls in office at the time."

The next section is entitled "Modern Basilica of S. Clemente," and opens with ten pages of preliminary remarks, which we entirely omit as without the scope of the work, and unnecessarily galling to the *acattolici*. We then arrive at the description of the church, which is illustrated by an interior and a section. An inscription over the door informs us, in eighteen lines, that it was restored in 1715. "We must regret that the restorations are not in keeping with the style of the church; and in particular, that the heavy carved, gilt, flat ceiling, substituted for the open timber roof, existing 1690, presses upon and conceals some parts of the mosaic apse. The stucco-ornaments, and the pictures above the arches of the nave, are also of the last century. A series of frescoes is painted over the colonnades that divide the nave and aisles."

Further on we read,—"Outside the chapel (of the Rosary) to the left, is the monument of Cardinal Venerio, of Recanati, who died in 1479. The columns sculptured with vine-tendrils, and birds pecking at the grapes are very beautiful. The capitals are admirable specimens of fine pierced work. On the rim of one of them is engraved the name 'Mercurius Presb. S. Clementis,' very probably the same John Mercurius, titular of the basilica, who erected an altar in it under the Popedom of S. Hormisdas, 514-523, and therefore they must have been removed from the underground basilica." . . . . Having described the modern portions of the church, we will proceed to examine it as carrying out the primitive arrangements of a Christian basilica, reproduced from the original beneath. First, the front, once painted, is roughly built with four antique columns, sustaining a Gothic canopy, three of the columns being of granite and one of *cipollino*, differing in order and diameter, two having Corinthian and two Ionic capitals; the door-jambs are rudely sculptured with tracings of dissimilar designs. There are also remains of other buildings, and the whole is carelessly constructed. . . . . From this outer porch we enter the quadriportico, which is oblong, being 62 ft. by 50 ft., and surrounded on three sides by sixteen pillars; twelve of grey Bigio marble, three of Numidian marble, and one of Oriental granite. The pavement of the atrium contains many fragments of green and white serpentine, and in the centre of the court is the impluvium to receive the rain. So far we have the usual arrangement of the Roman palace. The fountain at which the Christians purified themselves before entering the house of God was restored in 1868. In the porticoes of the ancient palaces, family busts and other ornaments were found. In those of the church were placed pictures." Again: "As we passed through the quadriportico to the great door of the church, persons excommunicated and utterly cast forth from prayer at the time, weepers, and mourners in sackcloth and ashes,—winterers as abiding the elements,—would lament their exclusion and beg for prayers. The vestibule of



PORTSMOUTH DOCKYARD EXTENS

the modern church being precisely over the ancient one, the first step into it would bring us among the catechumens and penitential hearers, both of whom were obliged to withdraw before the offertory. They were under the rod of the *ostiarius*, and hence this place got its name *Narthex*, which signifies a rod.

The interior of the church before us is 170 ft. 6 in. long, by 70 ft. 9 in. in width. On either hand sixteen antique columns separate the nave from the aisles; five of them are Parian marble, and of these four are fluted and one plain; five others of Numidian marble, three of granitello, two of Oriental granite, and one of *bigio*. The pavement is of beautiful *Opus Alexandrinum*, in varied patterns. More than one-third of the nave is occupied by the choir, with its paschal candlestick and elevated ambones on either side. At its further end is the shrine of the martyr, to whom the church is dedicated, with the altar over it, raised in front of the bishop's throne, and the sedilia for the priests. The sight is arrested, at this most important point of a Christian basilica, by the ciborium over the altar, and the rich mosaics of the apse. . . . . The high altar is separated by marble panels from the laity, the penitents, and the catechumens. . . . . Before we approach that elevated spot, which, in all the ancient basilicas, is nearly the same,—a platform from wall to wall, mounted by steps on either side of the altar,—let us examine the choir, on a lower level, but raised also by one step above the floor of the church. It is paved with rich Alexandrine work; the entrance-gates are enriched with mosaics; the great marble panels are carved with wreaths and crosses, and one conspicuous monogram frequently repeated; and on the jambs supporting them are engraved the fish, the dove, and the branches of the vine." This monogram, the author sees reason to suppose, is that of Pope John II., 532—534; and the panels upon which it is found to be of the sixth rather than of the ninth century.

On either side of the choir are the *ambones*. The word *ambo* is said to be derived from the Greek word *αναβαινειν*, to go up, which might apply to any other staircase, so that it is possible that *ambones* may be a colloquial corruption of *umbones*, that is convex projections, or elevated promontories. . . . . The Gospel *ambo* has a double staircase, on one side toward the altar and on the other toward the narthex. According to an old Roman ordo, the two acolytes with their candles separated when they reached the *ambo*, two sub-deacons with thuribles, and the deacon with the Gospel, passing between them; and going up into the *ambo* by one staircase, the sub-deacons immediately descended by the other, and there stood. A third sub-deacon, preceding the deacon, held in his left hand the Gospel to be opened at the mark, and the deacon read on a higher step in the *ambo*, which a sub-deacon was not to mount. . . . . As we stand below the altar before the slab of the martyr Consul Clement, on either hand are two white marble *transennæ*, admirably worked, and they were once, probably, in their proper place in the lower basilica. These network panels sufficed to admit air to the lamps within, and did not hide the martyr's body from the sight of the worshipper. In the more ancient *transennæ* the interstices were larger, that cloths might be passed through them to touch the body; for the corporeal relics were not then generally distributed. On either side of the shrine, steps lead to the platform upon which the altar stands; and to know the use of the altar we must turn to the episcopal chair behind it, raised by three steps above the sedilia, for the priests, diverging from it on both sides. . . . . The bishop then was most appropriately placed in that seat, where the prætor had decided so many profane causes, for between him and the people is no longer the table upon which the death-warrant of Christians had been signed, but the altar upon which the Lamb of God, who taketh away the sins of the world, is immolated. . . . . The altar in St. Clemente's is at the west end."

Our task is now ended. If, in reducing 450 pages to a few columns, the soul of the book has escaped through those great wounds which the process of excision has produced, we need not apologise to those to whom the *anatomy* of the subject is alone of vital importance.

St. Pancras Vestry-hall.—This building, of which we gave a view a few weeks ago, has been formally opened for business.

REPORT OF THE PRIVY COUNCIL ON EDUCATION.

This report states that "the two most urgent requirements of the country, viz., the provision of a suitable number of suitable schools, and the supply of a body of teachers qualified to conduct these schools efficiently, continue to be rapidly met. Voluntary effort, which in past years has done so much for national education, has seldom been found wanting, but, whenever it has failed to keep pace with the demands of a growing population, the enforced local organisation which by the Act of 1870 is kept in reserve to take its place, has been called into action." As a proof of the importance of voluntary efforts, we find that in the last ten years the sum of 4,238,099*l.* (to meet Government grants of 5,958,976*l.*) has been subscribed towards the maintenance of elementary schools under inspection; and the annual amount derived from this source has risen from 277,760*l.* in 1864 to 616,326*l.* in 1874. The number of subscribers in these ten years was respectively 145,856 and 251,185. Voluntary effort in the past year further contributed 172,166*l.* towards the erection of those elementary schools to which building grants were made, and 22,395*l.* towards the maintenance of training colleges under inspection.

The average attendance in aided schools has risen from 1,225,764 in 1870, to 1,727,449 in 1875, and the total number of names of scholars on the registers of the 12,167 "inspected" schools was 2,497,602, of whom 2,070,727 were actually present on the day of the inspection.

Up to the 31st August, 1874, the number of School Board schools in England and Wales was 838, affording accommodation for 245,508 children; and up to the 30th September the number of School Boards was 859; and excluding London, the sum paid to the Boards, out of the rates in the year 1874, amounted to 267,907*l.*; the sum raised for the School Board for London, was 105,951*l.*—being equivalent to a rate of 1¼d. per pound on the rateable value of the district. The average rate per pound on the rateable value of the other School Board districts was, in English boroughs 2·13d., and in English parishes 3·22d.; in Welsh boroughs 2·58d., and in Welsh parishes 3·01d. In no less than forty districts the rate amounted to 9d., and over, per pound, and the highest rates in England were reached in the parishes of Queenborough and Staplehurst, Kent, with 1s. 4d. per pound each, and in the borough of Chesterfield with 10d. In Wales the highest rates were in the parish of Melindur, Glamorgan, with 1s. 3d., and the borough of Llanidloes with 6½d.

The School Boards have availed themselves freely of the power of borrowing on the security of the rates and loans amounting to no less than 4,179,174*l.* have been recommended to be granted to 502 School Boards, by means of which new accommodation will be furnished for some 370,956 scholars.

Besides the sums received for the rates, the sum of 1,490,038*l.* was actually paid to the treasurer of Board Schools during the year in respect of loans; 574,693*l.* of this were advanced to the London School Board.

The total expenditure of the School Boards in 1874 was 1,825,957*l.*, of which 1,397,857*l.* were spent in the purchase of sites and the erection of buildings. The average cost of completed schools, including furniture and fittings, was 11,635*l.*; the average cost per child accommodated, 11*l.* 19*s.* 11*d.*

THE SANITARY CONDITION OF BATTERSEA AND NEW WANDSWORTH.

An outbreak of scarlet fever of a serious nature, in Battersea, has led to grave charges being made respecting the sanitary arrangements and condition of the locality, against the Wandsworth local authorities, in whose district it is situated. The charges refer more specifically to the unsatisfactory condition of the sewers as regards ventilation. Mr. Thomas Buckham, C.E., who resides in Spencer-road, New Wandsworth, has just addressed the Home Secretary on the subject, in which he says: — "The ventilation of the sewers has evidently been neglected, and no apparent precautions were taken to prevent the approach or spread of this fearful malady. I do not know whether or not you have any jurisdiction over the 'Board of Works for the Wandsworth District,' in which body I presume is placed the responsibility of carrying out the Acts of Parliament imposed upon them in the year 1856 and subsequently. But if you can by any means ask them to empower their medical officer, surveyor, and sanitary inspectors with some discretion to adopt temporary means to alleviate the present calamity, you will command the united thanks of the whole neighbourhood." Writing to the surveyor of the Wandsworth District Board himself, Mr. Buckham states that in the whole vicinity of New Wandsworth, with the exception of the two main roads, the sewers are totally without ventilation, and that the ventilators of the other portions of the parish have never been charged with any deodorants for now nearly two years, the effect of which is that the residents of the district are constantly inhaling disease. He adds:—"As you are aware we are situated at a level of upwards of 60 ft. above the southern low-level sewer, the consequence being that at high water in the Thames, in muggy and stormy weather, we get a rapid discharge through the traps and water-closets of the houses, impregnating the cisterns and the dwellings with the nauseous and fatal gases emanating from a system of sewerage nearly the whole way to Deptford. It appears to me there is a laxity of duty somewhere, and I think the sooner your Board give instructions for some remedial measures, the better will they be respected."

PORTSMOUTH DOCKYARD EXTENSION.

It is understood that her Majesty the Queen is about to open the new works at Portsmouth, a view of which we now present. Very remarkable works they are. When they were begun in 1866, the area was mere mudland, which was left uncovered at every tide. The outer enclosure or rampart against the sea, consists of an internal and an external wall, with the space between them filled in with a core of clay. Owing to alluvial deposits, great difficulty was experienced in finding a solid substratum for these walls. The area of the dockyard is 115 acres; the area of extension, 178 acres; total 293 acres. The walls of the basins are exceptionally strong, the lower part being composed of concrete, lined with brickwork, and the upper part with Portland stone, bound or "coped" with granite.

The walls of the docks are of Portland stone and granite. The locks will have a depth of 27 ft. 6 in. over their inverts at low water spring tides, and will thus be able, at all states of the tide, to transfer a first-class ironclad from the tidal to the repairing basin, or *vice versâ*. The locks and docks have greater fulness of section than older docks, to meet the altered form of our modern ships. The entrances to all of them are 80 ft. wide. The depth of the basins and docks is 50 ft.

In construction, railways, ninety-four steam engines, steam cranes, steam hoists, &c., were used, and from 700 to 800 convicts have been continually employed. Bricks, the average production of which has been about 20,000,000 a year, have been made by the convicts.

The caissons of the docks, between the tidal and the repairing basins, are not floated into position, but are slid into and out of chambers in the walls.

The estimated cost for the completion of the undertaking was 2,207,000*l.*

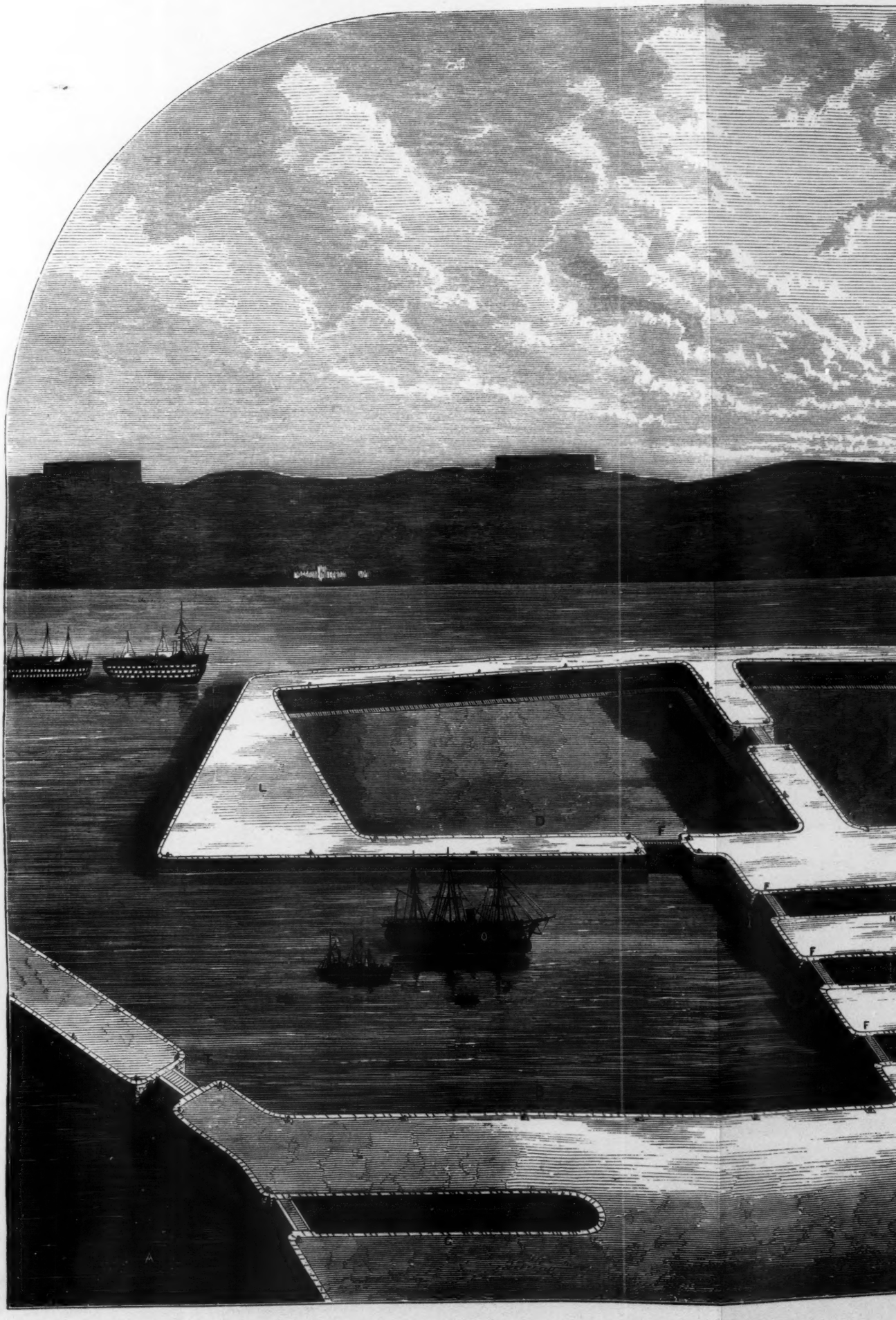
The work is being carried out by Mr. Henry Wood, the Admiralty superintending civil engineer at Portsmouth, assisted by Mr. Macdonald.

Our illustration shows:—

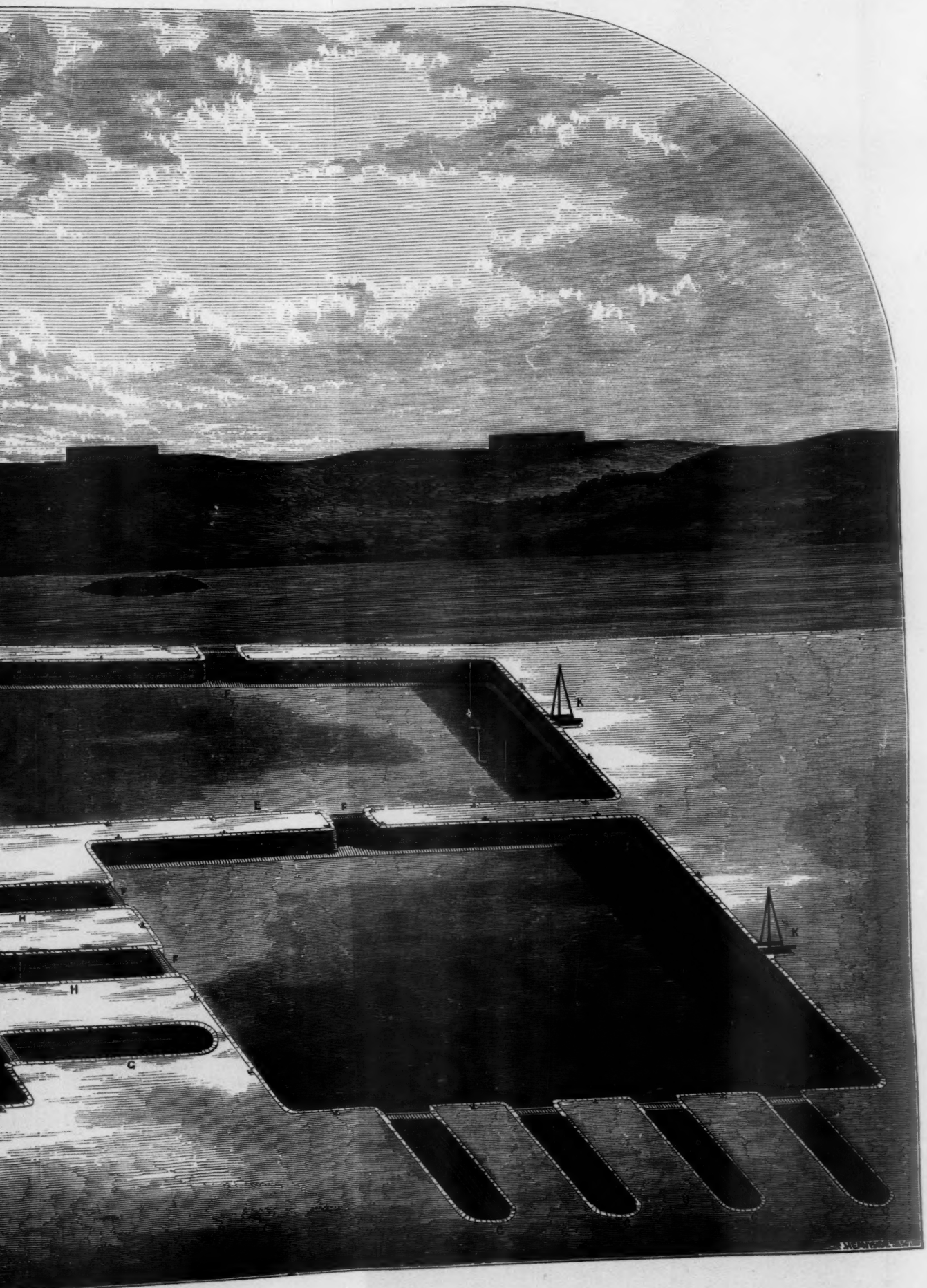
A. Steam basin opened by the Queen on the 25th of May, 1848.
B. Tidal basin, open to the harbour, and subject to the same fluctuations in the height of the water in it as the harbour.
C. Repairing basin, having an area of 1,369 ft. by 700 ft.
D. Fitting basin.
E. Rigging basin.
F. Caissons.
G. Docks.
H. Locks, to be used also as docks.
K. Shears; one having a lifting power of 130 tons.
L. Reserved for the erection of a coal depôt.

In the background are seen Porchester Castle, Portsdown Hill, and forts.

The Llansaintfraid Chapel.—At a meeting of the building committee of the Bethesda Chapel, it was decided to accept Mr. Richard Edwards's tender for the alterations and renovation required for the chapel, according to plans prepared by Mr. Lay, of Welshpool.



PORTSMOUTH DOC



OCKYARD EXTENSIONS.

THE ORDNANCE SURVEY.

Surveys of England and Wales on three different systems are now in course of completion by the Ordnance Department, viz., on 1-in., 6-in., and 25-in. scales. Scotland is also being mapped out on the three scales, while the surveys of Ireland on the 6-in. and 1-in scales are being revised. On the completion of the survey of Ireland on the scale of 6 in. to a mile, the survey of England and Scotland, which had been previously proceeding on the scale of 1 in. to a mile, was resumed, but the survey of Ireland on the 6-in. scale having proved to be of immense importance for the valuation of that country, a similar scale was adopted, and Yorkshire and Lancashire in England, Wigtonshire, Kirkcudbrightshire, Edinburghshire, Haddingtonshire, Fifeshire, and Kinrosshire, and the Isle of Lewis, in Scotland, were surveyed on that scale. But it was found that the absence of townlands in Great Britain, the areas of which were engraved on the plans of Ireland, rendered the 6-in. scale plans of far less value in Great Britain than in Ireland, and it was ultimately decided that the scale of $\frac{25}{2500}$, or 1 in. to an acre, should be adopted for all the cultivated country in Great Britain, and the 6-in. scale for the uncultivated parts. This 25-in. scale will enable the areas of any property to be easily obtained from the maps.

On December 31st the maps of the following counties in England, on the 25-in. and 6-in. scale, had been surveyed and drawn,—Northumberland, Durham, Cumberland, Westmoreland, Yorkshire, Lancashire, Cheshire, Flint, Denbigh, Essex, Middlesex, Kent, Sussex, Surrey, and Hampshire, and the Isle of Wight and the Isle of Man; while portions of Pembroke, Cornwall, Stafford, Warwick, Herts, and Oxford had been completed. The new survey on the 1-in. scale is completed, down to a straight line drawn from Preston to Hull, and the south-eastern counties are completed, with the exception of the drawing in of the hills.

Of Scotland, nearly the whole of the mainland has been mapped out on the 25-in. and 6-in. scale, and the new 1-in. survey has been proceeded northwards as far as a line drawn from Oban to Peterhead, the maps for the whole of the country south of this line being engraved in full, and a large portion of the remainder being engraved in outline, and with names only.

The revision of the 8-in. maps of Ireland is finished in so far as relates to Ulster, and the counties of Kildare, Carlow, Dublin, and Westmeath. The 1-inch map of Ireland needs only the hills to be filled in in the following counties:—Fermanagh, Cavan, Galway, Clare, Tipperary, Kilkenny, Carlow, Wexford, Waterford, Cork, Limerick, and Kerry.

The total areas surveyed are as follows:—In England and Wales, of a total area of 58,000 square miles, 26,358 have been surveyed on the 6-in. and 25-in. scale. In Scotland, out of an area of 30,000 square miles, 28,858 square miles have been surveyed, and the maps published.

Besides this, 819 sheets of a special map of London, on a scale of 5 ft. to the inch, have been published, and special maps of other towns, on a 10-ft. scale, are being engraved. But it would be tedious to enumerate the various works which the Department has in hand, for they are too numerous to specify, and many of them are not of sufficiently general importance. It is satisfactory to be able to add that the progress of the work in which the public has the greatest interest, viz., the mapping out of our country on a systematic plan, is progressing surely, if not as quickly as would be desirable; and that the special calls of the War Department for maps for military purposes do not seem to interfere much with the progress of the work.

A GREAT HOTEL FOR GLASGOW.

After some litigation operations have commenced for the erection of what is intended to be one of the finest hotels in the country, to be situate at Charing-cross, in the West End of Glasgow. The site at Crescent-place, Sauchiehall-street, and lying between Woodside-crescent and St. George's-road, was acquired by Mr. John Duncanson, builder, with the object indicated some little time since, but the work has been retarded by the legal opposition of parties who conjectured that by the partial demolition of the fashionable houses now standing there, and building on the roadway in front of the crescent, the rights of the public would be interfered with, and the amenities of the neighbourhood destroyed. Mr. Duncanson, however, having obtained from the Lord Ordinary, in the Court of Session, a declaration of his absolute right to the ground, the work of erection will proceed without further delay. To Mr. James Thomson, of the firm of Messrs. Baird & Thomson, architects, Glasgow, has been assigned the task of preparing the plans. Preferring not to rely solely on his own individual taste and experience, and knowing the determination of Mr. Duncanson to make the structure an exceedingly handsome one, the architect gladly availed himself of the suggestion of the proprietor to accompany him on a visit to London, to inspect some of the hotels there, with a view to adopt and embody such points of beauty or utility as might suggest themselves. Mr. Thomson also, subsequently, inspected some of the hotels of Paris with the same object. It is intended that the new hotel shall have an elegant elevation in Sauchiehall-street, with a large public entrance in the centre of the building. There will be spacious shops on either side the front entrance, 16 ft. 7 in. in height, and ranging in frontage from 40 ft. to about 15 ft., the front of the hotel being carried on iron fluted columns. The existing houses at Crescent-place, a portion of which will be merged in the hotel buildings, are now being partially transformed, so as to provide bedroom and other accommodation. To a height nearly corresponding with these houses, the new erection will be carried round the other three sides of the square, leaving a sort of court inside which is to be built up to the height of the first story, and lighted from the roof with glass, the remaining space, up to the height of the surrounding buildings, being left as a "well-hole," or ventilation space. The dimensions of the dining-hall will be 71 ft. long and 39 ft. in breadth, with 30 ft. height of ceiling, and these will be from 130 to 150 bedrooms, with ample parlour, smoking-room, and other accommodation to be found in first-class premises of the same kind. Absurdly enough, the establishment will be named the "Charing-cross Hotel," and the total cost will be between 80,000*l.* and 90,000*l.*, including the sum of 20,000*l.* paid for the site.

AN AMERICAN VIEW OF CHURCH ARCHITECTURE, AND CHURCH SCHOOLS.

In the days of the Apostles Christians gathered for worship in private houses or in public rooms hired, or donated to them. When terrible persecutions raged, they met in more sequestered places. In the earliest centuries, followers of Christ were to be found in Syria, in Egypt, in Africa, and in Asia. About the year 244, the Emperor Philip, the Arabian, favoured the Christians, and gave them permission to build churches. In one or more of these lands ruins of the most ancient churches in the world are to be found. More interesting discoveries may yet be made by students of these ruins. It is supposed that many of the earliest churches resembled Jewish synagogues. With the exception of some very ancient ruins, comparatively little is known of the architecture of the churches of the first century.

About the fourth century, the Roman emperor, Constantine, espoused the cause of the Christians. By him and his successors many churches were built. In those days there were many heathen temples throughout the Roman empire; there were also buildings called Basilicas. The Basilica was often, if not always, grander even than the temples used for idolatrous purposes. The Basilica might be called a palace in which justice was administered, and a part of which merchants could use as an exchange. When new churches were erected, some were built on the plans of the heathen temples—some on the plan of the Basilicas. To-day, the visitor in Rome can find a few churches, said to have been originally heathen temples, or can look upon quite a large number of churches that so resemble the Basilicas that they have been called Basilican churches. These great buildings—their walls heavier than those of many an ancient fortress—in whose pillared interior the words of a speaker sound strange and hollow, under whose chancels rest the ashes of the dead,—these buildings, which one can fancy exceed in grandeur many of the heathen temples of olden times, have in their turn been looked upon as models for new churches for ages.

The architects of these buildings seem rather to have understood the copying of the wrecks of heathen splendour than they did the fine requirements of a building suited for Christian worship; indeed, these buildings were better suited to impress an awe-struck worshipper of the divinities of pagan Rome than they were for places of Christian worship.

Although, during the ages, certain styles of architecture were introduced, the interior proportion of the churches seem copied from the first Roman churches.

After the dark ages, many of the Roman Catholic churches and cathedrals passed into the hands of Protestants. Although three centuries have passed since the Reformation, it is sad to see how little improvement has been made in the architecture of the churches of evangelical Christians. To be sure, such men as the gifted Spurgeon, of London, and Talmage, of Brooklyn, have made important improvements in the architecture of their churches, yet many Protestant places of worship may almost be called miniature copies of the great cathedrals of olden times.

A new feature in church architecture, introduced within a century, is the Sunday school-room.

The history of Sunday-school architecture can be summed up in few words. During the last ninety-three years it has been customary with many congregations to fit up the cellars or lecture-rooms of their churches for Sunday-school purposes. During this period commendable efforts have been made by earnest Christian men and women to found schools in places especially convenient for children. These earnest workers, realising in some measure the advantage of having good attractive buildings for the children, have erected some of the finest Sunday-school buildings in America. In the architecture of such schools there has been displayed much taste and ingenuity. The architects of these schools have not been under the thraldom of traditional rules as have been the architects of so many churches. Many congregations, stimulated in part perhaps by the example of the earnest men and women who have been so successful in founding what have been called mission schools, have built quite handsome—sometimes very handsome—additions to their churches for Sunday-school purposes.

In these days, when a new church or Sunday-school room is to be built, generally a building committee is appointed by a congregation. Upon this committee devolves the selecting of a design for the new building. An architect is employed. The architect submits a design, the greatest merit of which often is, that it appears churchly, looks like some old cathedral. The gentlemen on the committee may be men of taste and education. If any of them were about building a country villa, he would have many suggestions to make to the architect,—he would perhaps aim at rivalling in beauty of variety and architectural perfection, the baronial halls of England or some of the scarcely less beautiful country homes in the suburbs of the cities of America. Yet these gentlemen adopt a design for a church with scarcely a dissent. When the design is presented to the members of the church, although they are expected to approve or condemn or amend the design, it would seem that they generally, with few words, accept the selection of their committee.

Within the last few years, a new style of church architecture has made its appearance in America. Although the style is new in America, there were churches built centuries ago on a very similar plan. I allude to the tabernacle Mr. Talmage has reared in Brooklyn. It is doubtful whether Mr. Talmage, with all his devotion and earnestness of appeal, has been enabled to do as much for the cause of Christ as he has accomplished by introducing this style of architecture. The style of the Brooklyn Tabernacle, which is semicircular, has been copied by Mr. Hepworth, of New York, who preaches to one of the largest congregations in America; and by scores of other churches.

The congregation of the Rev. Stephen H. Tyng, jun., of New York, has also been enabled to contribute to the improvement of church architecture, by erecting a church on a somewhat new style. The arrangement of his pulpit is specially worthy of notice.

In this age a minister is expected to be an agreeable speaker. Although a minister looks to a higher source than simple oratory to affect the hearts of his listeners, yet it would seem as though it was more difficult for him to speak well in some churches than in others. An orator longs, for his own sake as well as for the sake of others, to have all the advantages which the

architect can give him. He prefers to have the people ranged in a somewhat circular position around him, or at all events to have them ranged in such a way that when he speaks he will not feel as though he was addressing an army drawn up as few abreast as though in marching order. He desires to stand in a position in which he can give and receive sympathy,—in which he can see and be seen by every one whom he addresses. He does not desire to have any of his audience hidden behind pillars. Could a Demosthenes, or Cicero, or Quintillian come to this earth again, and have occasion to speak in some modern churches from enclosures called pulpits, he might well shrink, if he cared for his fame, from doing so, feeling that he was called upon to undertake a cruel task. A faithful minister of Christ, however, has a message of such importance to dying men that he is thankful to be enabled to speak to his fellow mortals in any church in which his voice can be heard.

The architecture of Sunday-school rooms is as yet in its infancy. It should receive especial attention. It, perhaps, can be truly said that the style of every Sunday-school building erected at this time will be copied not only in this land, but also in those lands in which the Sunday-school system is being introduced, and will be transmitted to future ages.

Mr. John Wanamaker, of Philadelphia, who has been so intimately connected with the founding of the school so widely known as Bethany Mission—now as Bethany Church—one of the largest schools in America, has shown a commendable interest in Sunday-school architecture Mr. Wanamaker having offered premiums for the best designs for Sunday-schools, some twelve designs were submitted from architects in different parts of the country. In the *Sunday-school Times* of August 1st, 1874, can be seen the drawings of the design to which was awarded the highest premium.

A church or Sunday-schoolroom should be broad and spacious, cheerful and well ventilated; a building well lighted by day and which can be handsomely lighted up by evening.

Every modern improvement which will add to the convenience and comfort of even the youngest member of the congregation, should be remembered.

Especial care should be taken to have the building heated by the best means. Some furnaces are injurious to health. Probably Sunday schoolrooms, and prayer-rooms, in the country, would be heated most advantageously by simply burning wood in an open fireplace.

To rear a good church in a neighbourhood in which it is needed, is a work which Christian men and women should covet. Long after the designer shall have passed away the building may stand a monument to their noble toil.

One main object of this essay is to draw attention to the fact that the architecture of many churches and schools might be greatly improved at comparatively little cost.

It would be startling, indeed, if it were known how badly many churches and Sunday-schools are ventilated. Can it be possible that those who meet in these buildings are ignorant of the great importance of breathing pure air? Must their attention be called to the fact that bad ventilation is said to be a more potent cause of disease than any other? Must the long, terrible, ghastly list of diseases which follow in its train be again enumerated? Shall they be reminded of the depression,—of the petulance and discomfort which they have so often experienced? Perhaps one of the best ways to get an idea of the importance of good ventilation is to study the history of hospitals. Such a history, however, is too terrible to dwell on! I draw attention the more freely to this fault, so common in church architecture, as it can be so easily remedied,—often at such slight expense. In every church or school, or infant class-room, in which there is even a suspicion of the ventilation being bad, a competent architect should be employed to give, after due consideration, a careful opinion as to what improvement in architecture is needed. Let it never be forgotten, however, that no matter what skill the architect may display, good ventilation will not be secured unless sextons are better supervised than they often are. How many sextons are there who know enough to air a church or schoolroom before and after its being used?

It is to be regretted that the sunlight is not oftener admitted into churches and schoolrooms. From every assembly of people certain poisonous gases are given forth. The gases, to a greater or less extent, settle in the furniture, &c. The rays of the sun are said to be an excellent disinfectant. There are churches whose gloomy, though perhaps imposing interiors, have not for centuries been brightened with a flood of cheerful light. The custom of having stained glass in the windows is to be deprecated,—a custom that has descended from a superstitious age.

Some churches have lights so placed about the minister that the congregation cannot look at him without having their eyes dazzled; other churches are so poorly lighted that the congregation can scarcely read a hymn. The manner of arranging the lights in a church, especially about the pulpit, should receive very tasteful and skilful attention.

The position and style of the pulpit in many a church could be greatly improved.

There are some churches and schools of such faulty architecture that no architect can alter them to his satisfaction.

In future, let Christians blessed with architectural talents lay at the feet of Jesus the choicest treasures of their genius, then a more independent, a more suitable style of church architecture will prevail than has ever graced the earth before.

New York. JOHN C. HENDERSON, JUN.

PROPOSED FUSION OF THE INSTITUTE AND ASSOCIATION.

SIR,—The end, "Senior," last week assigned to my suggestions seems so untenable upon the facts put forth, and which he has in no way altered, that I really must apologise for asking space to reply. Had he definitely given the grounds upon which he based his conclusions, we might have seen the precise line that separates our opinions, but, as it is, I do not think he has at all confuted the possibility of a scheme such as I proposed, being attended with good effect.

From the tone of his letter, I should imagine he considers it impolitic that the Institute should do more than the "next to nothing" it now does, and, therefore, no alteration is necessary. I start with the contrary as an acknowledged fact, and wish to discuss merely the means by which it may be improved. If, therefore, he considers the present position of the Royal Institute of British Architects satisfactory, and one that it ought to occupy, I, of course, have no ground of debate with him; but if he agrees with me in thinking change desirable, I would ask in what he considers it defective, and how he would propose to remedy? We could then put our ideas side by side, and perhaps, by incorporation, produce what is really required. My object is simply to obtain a governing society occupying to the architectural profession, the position which the Law Institution does to the Legal, believing it would tend much to the improvement of our art and the public mind upon it.

In few words, "Senior's" letter amounts to about this:—

1. The Institute will be annihilated *because* the Fellows will then be subject to some little control from other members.

2. Students will have the opportunity of learning more, though paying less; *therefore* the scheme is all wrong.

For my own part, I cannot see how these conclusions come logically out of the arguments. I had hoped the reasons I gave for each suggested alteration were so plainly set forth that misapprehension could not well arise.

"Senior" seems to have overlooked the fact that I was merely taking two societies with aims in common but different ways, and by endeavouring to combine the acknowledged best points (and shall I say—prejudices?) of each to suggest a course by which they should become one, and so in future work in harmony and with mutual confidence. He also seems to have forgotten that my scheme is only the suggestions of one mind, open to amendment in all points. It is well known that for rules to be complete, for no matter what purpose, they should be the result of the experience of many minds and many views: it was to obtain these views I asked you to publish my ideas and this reply; and if not intruding too much on your kindness, I should wish to answer somewhat in detail the issues "Senior" raises.

He asserts that the new society must necessarily be of much lower character than the present. My wish is quite the contrary. In extending the term "Associates," I said "*gentlemen* willing to concur, &c.," and I have yet to learn in what manner, no matter what profession (or even *trade* if you will) they follow, they are inferior to architects. The mode of election I suggested is, if anything, more exclusive than the present, and as it rests with the members themselves, I do not see why we need anticipate its being abused any more than we do now. No one will, I think, venture to affirm that the status or prestige of the Inst. C.E. is below that of the R.I.B.A.; yet in its charter the qualification of an Associate is given in very nearly the terms I suggested, except of course the application to architecture instead of engineering.

I fail also to see how my suggestion as to hon. members will lower the Institute in that particular. My idea is that the honour should be as great to the Society as to the individual, whom, be it remembered, the Fellows only have the power to elect.

Notwithstanding this, however, "Senior" will, I hope, give me credit for wishing to raise the standard for Fellows by making it a necessary qualification that they shall have attained a considerable degree of eminence in their profession, which rule I would have carried out as strictly as in Great George-street, where the form of proposal recommends a person because he is or has done so-and-so, &c.; at the R.I.B.A. it is simply because he has the slight qualification required and wishes to join. This one trait I think fully illustrates the manner of the two Societies.

I drew particular attention to the unusual composition which I suggested for the council, and gave my reasons. "Senior" opposes, but gives none except the meagre note that only four out of ten would be Fellows. He forgets that the *ex officio* members would in all probability also be Fellows. The Associates and Students, as being the far larger, though "junior" classes, are fairly entitled to be represented, especially when it is remembered that the former is really the type of the "average architect." The mode has worked well in the Architectural Association. The introduction of the hon. member to the Council would, I believe, leaven the discussions with just so much of the lay element as is necessary in the consideration of all professional questions.

As I have before said, my remarks are suggestions only; and if on the whole four was thought too small a proportion to be Fellows it could readily be increased, though for my own part I can see no reason for assuming, as "Senior" does, that the Associates would necessarily combine with the Students in preference to siding with the Fellows. From an intimate knowledge of both classes, I should say rather the reverse. In the proportions I gave the Fellows would most decidedly be most powerful, for in conjunction with either of the other classes they are the stronger; and if opposed to all the rest, should they not give way, though even here the *ex-officio* might support them? My wish, however, would be that no such *class* questions should disturb their deliberations. Let us hope the time is at hand when such petty feelings may be confined to the "vestries and vestryism," whence they mostly originate.

As to the subscription, "Senior's" remarks are not only intemperate but beyond the question; the one I quoted is that which has been that of the Architectural Association for some considerable number of years, and without any ill effect. As to my remark with regard to the examination fees, it is evident some further inducement is necessary to cause present students of the Insti- to submit to it; what I suggested was simply means to an *end*. If "Senior" likes them not, pray put forth other, or perhaps he likes not "the end."

In conclusion, may I further suggest that if this correspondence is to answer any practical good, it will be best attained by its being carried on with an unimpassioned calmness.

R. E. P.

SIR,—It appears to me that "R. E. P." would, by his scheme of amalgamation, produce a society much inferior to the Institute, and possessing less activity than the Association; but I think "A Senior," in your last issue, when writing of "quantity measurers" as amongst the miscellaneous members to be introduced in the new scheme, threw a slight upon one branch of the profession. It is the fashion with certain architects to look down on those who take out quantities as belonging to an inferior branch of the profession, or rather an inferior profession altogether. Why should this be?—for, leaving the provinces out of the question, it is a fact that

a large number of those who take out quantities in the metropolis are properly qualified architects, who have, through a mere chance, gradually taken up the more scientific branch of the profession of an architect and surveyor. Some of the gentlemen now engaged on quantities have been students of the Institute and Royal Academy, several have passed the voluntary examination, and one was a Pugin Travelling Student. Many London quantity surveyors have been estimating clerks to contractors, and their general knowledge of building matters is often much superior to that of the ordinary architect.

In the provinces the quantity surveyor is almost unknown; all call themselves architects, whether they are qualified professional men, or ex-builders' foremen, or auctioneers.

QUANTITY SURVEYOR.

CASES UNDER THE METROPOLITAN BUILDING ACT.

Enclosures of Buildings.—On Tuesday, the 20th ult., Mr. Sedgwicke, of 211, Hackney-road, appeared before Mr. Bushby, at the Worship-street Police-court, on a summons by the district surveyor of Shoreditch, for constructing an irregular building.

From the statement of the district surveyor, it appeared that defendant had constructed a wooden enclosure and roof to an external staircase leading from defendant's house to a detached building in the rear. The fact was admitted; but defendant stated that, after receiving a formal notice from the district surveyor, he had removed the wooden roof, and he considered that what remained of the structure could not be considered a building under the Act. The district surveyor pointed out that, although by the first schedule every building must be enclosed with *walls*, it was not provided that there must necessarily be a roof, though section 19 provided for the *external covering* of roofs; he, therefore, contended that it was not essential that there should be a roof in order to constitute the structure a building within the meaning of the Act; there was no definition of a building in the Act. The learned magistrate said it appeared to him that one of the principal objects of the Act in question was protection against fire. He thought the risk from fire to defendant's structure was almost equally great whether the structure was covered with a roof or not, and that the Act was intended to prevent the erection of such a structure. He would, however, adjourn the case for a month to enable defendant to make an application to the Metropolitan Board of Works, if he thought proper, to ask their sanction for some modification of the structure instead of the enclosing walls which the district surveyor had required to be built.

Alteration or Repair.—Mr. M'Cann attended on a summons by the same district surveyor, for refusing to pay a fee of 15s. for an alteration to a shop-front at No. 28, Pitfield-street.

The district surveyor stated that defendant had executed the work without giving due notice. When first discovered, the whole of the old shop-front had been removed, and afterwards a new front was put in in a different form. The fee claimed was a reduction on the amount that might be charged. Defendant contended that the work was a necessary repair, not involving any structural alteration, and therefore exempt. He stated that the old shop-window consisted of two squares of glass, one of which had been broken, and that he had only taken out and repaired the sash, and made it for one square of glass instead of two. The defendant afterwards gave evidence on oath as to the case. In cross-examination by the district surveyor, he admitted that the entrance in the old shop-front was in the centre, whereas that in the new one was at the side. Upon this evidence the magistrate decided that the work was an alteration within the meaning of the Act, and ordered payment of the fee claimed, with the costs of the summons.

Cornices of Shop Fronts.—Mr. J. Randall, builder, of Victoria-road, was called on three summonses, by the same district surveyor, for irregular construction of the shop-fronts to three houses in Bath-street.

The defendant did not appear, and on proof having been given that the summonses had been duly served, the case was heard in his absence. The district surveyor stated that, according to sec. 26 of the Act, the cornices of shop-fronts, as well as other projections, "must be so arranged and constructed and so supplied with gutters and pipes as to prevent the water therefrom from dropping upon or running over any public way." This the defendant had neglected to do. He had been served with notice to amend the work in each case, but had failed to do so. These facts having been duly proved, the magistrate made orders for the work to be done in fourteen days, with the costs of the summons in each case.

Additions to Large Buildings.—At Worship-street, Mr. William Scott, builder, of Antill-road, Mile End, was summoned for erecting a new building, and uniting it to an old building, the cubical contents of which then exceeded the maximum allowed by the Metropolitan Buildings Act, 18 & 19 Vic., cap. 122.

Mr. Philbrick, barrister, instructed by Messrs. Loxley & Morley, of Cheapside, appeared on behalf of Messrs. Charrington, to defend. The complainant was Mr. Legg, district surveyor of Mile End. Messrs. Charrington, it appeared, had recently had an addition made to their brewery in Brick-lane, Spitalfields, and the district surveyor claimed that the new building could not be united to the old without a party-wall being run up between the two, the Act of Parliament limiting the contents of a building to 216,000 cubic feet without party-walls. The Act was passed in 1855, and Messrs. Charrington's buildings were erected prior to that time. The Act was not retrospective, and the brewery, though admittedly exceeding the maximum allowed by the statute, was not interfered with. Mr. Philbrick argued that the Act did not contemplate the erection and addition of a new building which did not exceed in itself the statutory limitation, and the contents of that building alone not being in excess the summons must fail, as the Act had already legalised the old building. It was said that if a party wall was to be erected it would cause a loss of several thousands of pounds sterling to Messrs. Charrington, as it would divide their largest premises and compel them to remove a valuable erection called a "mashtub."

Mr. Bushby gave a lengthy judgment, in which he said that the 9th section of the Act enacted that an addition to an old building should, "to the extent of such addition," be subject to the regulations of the Act. The point was whether the limitation implied by the words "to the extent of such addition," meant that the old building was to be ignored in deciding what was necessary to render the addition conformable to the Act, or whether the limitation only meant that the old building need not be interfered with further than was necessary to make the new conformable to the Act. He thought the last was the most reasonable view, and made an order for the erection of the party wall, but was willing to grant a special case.

HOW THE DEPARTMENT OF ART CAN BE BEST UTILISED.

SIR,—It is exceedingly strange that, after so many years' experience in the working of this Department, outsiders should still be found insisting on that policy which has always proved abortive, viz., that the Department should be made a Technical School of Design. "Schools of Design," was the very title with which the Department was ushered into existence, but which was afterwards abandoned when the policy which was indicated by that title proved to be a false one.

A central art institution, directly interfering with and influencing technical developments of art, is an inversion of the ancient modes of proceeding; and when fine and technical art reached their highest, the old-world method of developing the fine arts was to encourage them in their highest aims, in order to raise the taste of the people, and by these means indirectly influence and improve all the subordinate arts of design.

The manufacturers should themselves look after their special artists and designers, take pupils into their designing offices and there educate them to their requirements, to the technical conditions to be fulfilled, taking care to collect all foreign novelties in the shape of patterns, &c. A central Department will never be able to supply designers for the manufactures with any marked success. As soon as you detach the special artist from the factory and the presence of the special manufacture, he will indulge in caprice, and wander from those practical limits which it is so essentially necessary to preserve.

A passage in an article in the *Builder* of the 24th ult. fully substantiates the correctness of this view: "But few of the students who are trained wholly in our schools ever succeed in making a means of livelihood as designers of patterns: while those students who spend the day in a factory and the evening in an art-school generally succeed in making a living of some sort."

What then should be the function of the Art Department? Why this—the development of monumental, of historical, art. As a Government department, it could most effectually render assistance to that regal art, which Sir Charles Eastlake and the Royal Commission on the Fine Arts, years since, declared was "beyond the reach of private patronage."* The department devoted to such a purpose would have a *grand raison d'être*. It would not interfere with the Royal Academy, which encourages that kind of art which is the offspring of private patronage. South Kensington by adopting such a policy would take the head and front in art education, and exercise a more potent and beneficial influence over the subordinate arts of design than by any other means.

W. CAVE THOMAS.

Property in St. James's-square.—Winchester House, No. 19, St. James's-square, was bought in last week at 42,000*l.*, the reserved price not being reached.

*"Mural Decoration has for a century and a half received little or no encouragement in England. Bare walls are the rule in our great public buildings, and in our churches. The object now is to find opportunities fit for the development and display of historical painting on a large scale, for this is precisely the class of painting which, more than others, requires encouragement beyond the means of private patronage. The want of such encouragement has long been regretted, not by professors only, but by all who have turned their attention to the state of painting in England,—a proof that the promotion of historic art is an object of interest with a considerable portion of the public."—*Report, Royal Commission on the Fine Arts.*

HYDE PARK AND KNIGHTSBRIDGE BARRACKS.

THE vast and rapid extension of London which now encircles the park and Kensington Gardens adds to the value of these beautiful woodlands, in proportion to the yearly increase of population—the crowds frequenting the walks and glades, with thousands of carriages thronging the drives, in quadruple ranges, show how the public appreciate the taste and skill displayed in border plantations, shrubberies, and flower-walks.

Both the ride and the drive are continuous round the park; but the drive, which is now changed to the interval between Hyde Park Corner and Albert Gate, has of late been often blocked by the increasing stream of carriages in double lines both going and returning. The taste displayed in shrubbery and floral decoration is most conspicuous in perhaps the worst portions of the border, as, for instance, at the back of the paltry shops and houses of Knightsbridge, and up to the barracks; but here for the extent of about 300 yards there is no ornature (on one side) save the unsightly old building, the officers' quarters, stables, and mess-rooms, with sentinels dismounted—in fact, four ranges of windows, the bedrooms of troopers, overlook and command the fashionable drive—added to this, the street frontage on the south side obtrudes upon and narrows the Kensington main road, which is the principal western thoroughfare. Except as regards the officers' quarters, which command an unrivalled park view, these barracks are decaying, old, and inadequate: the rooms being but 8 ft. to 9 ft. high, whilst there is no inclosure for drill or muster; and their position is such a bane upon the choicest quarter of the town that all *neutral people* agree as to the expediency of moving them. Many, however, clinging to a fixity of tenure, object that "they must be near the park and palace," and therefore cannot be transferred to Chelsea. Now it so happens that there is a site upon which a modern and suitable barrack might be erected, at very little distance, and that is upon a spacious and open plot of ground adjacent to the palace entrance at Kensington, upon a part whereof now stands the old and disused barrack, covering a space of 220 ft. by 80 ft., between the Palace-road and Palace Garden Terrace, and to which may be added any portion of the open green, adequate to the erection of proper barracks, together with a reserve ground for drill and muster.

All this could be effected without encroachment upon the palace view, or upon any private property; and as the old palace is in a tottering state, and must shortly be rebuilt or removed to a higher position on the palace reserve of the gardens, the sooner the work is begun the better.

A portion of the palace grounds eastward stands 10 ft. higher upon the plateau, commanding a view of the round pond, and of Repton's plantation vistas; here is a site worthy of a palace, situate 400 ft. within the west boundary, and close to the central traverse roadway, without trespassing 1 ft. upon the public gardens. The new Guards' barracks stand also near to it, with entrances from Church-street and from Palace Garden-terrace.

The old palace was built in line with the garden's boundary wall, of which it seemed to form a part; the new palace, as recommended, would be interned in the grounds, with scope sufficient for any erection to suit Royalty, and even adequate to the reception of levees and drawing-rooms, as well as for an abode worthy the dignity of the empire.

It was suggested by a correspondent in the *Builder* to transfer the Guards' barracks to the centre of the park, near the ranger's lodge, where a sergeant's guard was formerly quartered to protect the magazine; here, although "far in wild and unknown to public view," where *several private pensioners' rural abodes have been erected*, the regiment might certainly be located, by clearance of the old guardhouse, new villa, cottages, and stables; but if the Horse Guard regiment were thus interned, adieu to the sequestration and user by the public of their once valued and beautiful park.

The position I have recommended stands clear of all interference with the palace, the gardens, or private property; in fact, the space of 18 to 20 acres, external to palace and gardens, has been for years an open waste! A more modern small guardhouse and five old cottages, occupy the northern and upper extremity, together with an inclosed pasture-field of about 8 acres, extend-

ing to Bayswater-road, all of which are in strict keeping with the condition of the old palace, and all are external to the gardens' boundaries. If Knightsbridge is a suitable position on account of its propinquity, this site is still more eligible; it would meet military requirements most thoroughly, and could not interfere with public rights.

QUONDAM.

THE FRENCH ARTISTS' ASSOCIATION.

THE twenty-ninth annual meeting of the Association of Painters, Sculptors, Architects, Engravers and Designers was lately held in the Great Hall of the École des Beaux Arts, Paris, under the presidency of Baron Taylor, the founder of the Association.

According to the *European Review*, on the opening of the proceedings by M. Louis David, an architect, read a report on the works of the committee of the Association during the year 1874 to 1875. He showed that on the 31st of December, 1873, the society numbered 3,892 members; the following year these had increased to 4,109; and at the present moment they numbered 4,500. The funds have, of course, risen in proportion. In 1873 the receipts were 83,818f.,—this year they had reached the sum of 158,418f. The expenses having only amounted to 80,209f., there is a surplus of 77,358f., which has been converted into 4,000f. Rentes; thus, with this addition, the income of the Association has now reached a total of 44,000f. M. Louis David concluded this interesting report by announcing that a fine-art sale would be held in the spring of 1876 to increase the Pension Fund of the Society, and called on all its members to assist in the successful realisation of this project. He then continued, amidst the applause of all the artists present, to eulogise the constant and devoted services rendered by Baron Taylor to the Association.

Baron Taylor thereupon rose to thank the assembly. With visible emotion he glorified French art, and declared that it gave him the greatest satisfaction to consecrate to art and artists what little strength he still retained. He has well earned the praise that was given.

THE RIGHT OF OWNERS TO SUPPORT FROM ADJACENT LAND.

LOWE AND ANOTHER *v.* TROTTER AND OTHERS.

THIS was an action, tried at Stafford, to recover damages for injury done to the houses of the plaintiffs by mining operations of the defendant under adjacent lands.

The property of the plaintiffs consisted of a public-house and premises adjoining the Brettal-lane railway station. The surface of the district has been long undermined, and old cracks in the house showed that the land on which it was had suffered from the effects of subsidence at a period prior to any workings of the defendants. The question, therefore, came to be whether some more recent cracks and damage now complained of were attributable to the acts of the defendants.

His lordship (Grove) carefully laid down the law with reference to the right of owners to support for their land from the adjacent land of their neighbours, and asked whether, assuming old workings existed, the defendants' acts had caused the damage for which the action was brought.

The jury found in favour of the plaintiffs, damages, 80*l*.

A question was also put to them whether, if the land had been in a solid state and unaffected by former mining, the operations of the defendants would have injured the plaintiffs' house. The jury found a difficulty in deciding this, and his lordship discharged them from doing so, saying that, in his opinion, the plaintiffs, although their house stood on "honeycombed" land, had a right to the adjacent support for the land, such as it was.

A GRANITE LIGHTHOUSE FOR CEYLON.

A LIGHTHOUSE has been built by Messrs. Shearer, Smith, & Co., for the Little Basses Rock, Ceylon, and is about to be transported there for erection. The tower, which is wholly formed of Dalbeattie granite, is constructed after designs by Mr. J. N. Douglass, engineer to the Trinity Board, its height measuring 101 ft. 8 in., its diameter at base 33 ft. 3 in., at top 22 ft. In plan it is circular throughout, and the courses of masonry are sixty-four in number. In profile it diminishes by an elliptical curve from 33 ft. 3 in. at base to 17 ft. at a point 67 ft. 6 in. high—the first fourteen courses, which are of solid masonry, forming a series of steps. From this point it is carried up vertically for 18 ft., when a projecting cornice is formed. Above the cornice, where the seventh floor is formed, the diameter is reduced to 16 ft. 6 in., thence again carried up vertically for 7 ft., when a heavy moulded cornice is formed which completes the profile. Its interior arrangement is a series of seven cylindrical rooms, each measuring 13 ft. in diameter, by 9 ft. 6 in. in height. The floors are formed entirely of granite, so fitted together as to be self-supporting, and forming at once a level floor for one room and a domed ceiling for the one immediately underneath. In the living-room are fitted a neat set of granite jambs with moulded mantel-shelf, whilst under the first door is a place set apart for a water-tank. The entrance-door is situated at a height of 33 ft., whilst at a height of 89 ft. a second door is placed where the first cornice forms a projecting ledge, nearly 3 ft. in width. The tower is also provided with sixteen windows, into the openings of which, as also to the doors, gun-metal frames are fitted. The Trinity Board have had Mr. J. R. Seldon as resident superintendent during the progress of the work, and, the tower being put together in sections, each section was personally inspected by Mr. Douglass previously to its removal. The blocks have been cut according to full-size templates, drawn out by Mr. James Oswald, foreman at the works, and the stones, when finished, put in their respective places under his direction,—the building being thus wholly fitted together before removal to its destination.

ST. JAMES'S CHURCH, BRIGHTON.

THE new building is up and nearly finished. It is in the Early English style of architecture, slightly decorated at the chancel arches, window, and reredos. The total length of the building, north to south, is 89 ft., outside measurement, and total width, east to west, 66 ft., outside measure; while the width of the nave is 24 ft.; height to springing of roof, 39 ft.; the roof rising above this about 23 ft. The width of the aisles internally is,—west, 17 ft. 10 in.; and east 14 ft. The church consists of a nave, two side aisles, and a chancel, the nave being lighted by a clear-story, having twenty-four single pointed-headed windows, and two double ditto, and three long lancet windows in the south end, with a circular window over, light being also obtained from the north by a large chancel window with tracery head. The walls of the clearstory on each side and the nave roof, are supported by three pointed arches of moulded brickwork, springing from piers of beaded kiln bricks, and Bath stone in courses, the corners being moulded, and the bases and caps of Bath stone moulded. The arches on each side of the chancel in continuous line with the nave are in Bath stone moulded, and having a "dog-tooth" worked therein. The materials of construction are,—for outside walls, flint work with kiln brick piers, lacing courses, eaves, and label moulds, with Bath stone window and door dressings, and Bath stone mullions. The roof over the nave is of open-timber work, with moulded and chamfered tie beams and ribs. The seating arrangements accommodate between 700 and 800 persons.

Messrs. E. E. Scott & Hyde are the architects, Messrs. Patching & Webber the contractors, and Mr. W. H. Webber, jun., is the clerk of works.

THE METROPOLITAN RAILWAY COMPANY AND THE MOORFIELDS CHAPEL.

HEAVY EXPENDITURE.

ACCORDING to the statement made by Sir Edward Watkin, chairman of the Metropolitan Railway Company, at the half-yearly meeting of the Company held on Friday last week, it appears that the Company have had to incur an exceptionally large expenditure in connexion with the Roman Catholic Chapel in Moorfields. In constructing the works of the Bishopsgate extension just opened, they had to pass immediately in front of the chapel, at a considerable depth below the street level, and under the Act of Parliament they were bound to maintain the structure exactly as it stood, not being permitted to pull it down. It was found, during the progress of the works, that the chapel was constructed upon piles, which in course of time became less substantial, and he said it further appeared that the architect of the chapel had put upon the building a tremendously heavy roof, making it top-heavy. The consequence was that the contractors had to underpin the whole of the chapel, to the depth of 30 ft. in the London clay, before they could construct an inch of the railway passing the chapel. The result of this underpinning was that the walls in some places cracked, and two or three valuable fresco pictures were damaged, which the company were responsible for, and he might say that the company had had to build a brand new chapel. They had paid to the Rev. Dr. Gilbert for the restoration of the interior of the chapel 4,000*l*. The cost of the underpinning amounted to 8,000*l*., and the expense of providing for the congregation in the interim a temporary church stood at 1,023*l*. They had also paid to the arbitrator 540*l*., together with 104*l*. to the solicitor, and had yet to meet the architect's claim for 900*l*., the entire cost amounting to 14,500*l*.! He added that the necessary works in respect of Finsbury Chapel amounted to 1,000*l*.

PROPOSED RE-NAMING OF BISHOPSGATE STREET.

A MOVEMENT has been started for doing away with the "Within" and "Without" as regards the well-known old street in the City, and at a Bishopsgate Ward Vestry-meeting which has just been held, a motion was made that Bishopsgate-street should be so-called throughout its entire length, instead of "Within" and "Without." It was urged in favour of the proposed change that on several grounds it has become absolutely necessary. It was urged that great and serious loss is caused by letters and parcels being delivered at wrong houses in consequence of double numbers, and also that the loss of time of persons traversing the streets to discover whether the person he requires is "Within" or "Without" is a great evil, and a source of annoyance, and involves pecuniary damage. It was objected against the proposal that there would be re-numbering, re-painting, and re-printing invoices and other forms, which would be vexatious to tradesmen; but this was met by the answer that the inhabitants of some 1,800 other streets in the Metropolis have had to bear this inconvenience in their turn. To the objection that the street would lose its historical and traditional character by the change, it was answered that such could not well be the result so long as the name "Bishopsgate-street" was retained. The proposal was, however, defeated, but it is stated that it will shortly be again brought forward, and be supported by petitions in its favour by several of the inhabitants in the street.

ENGLISH AT THE MANSION HOUSE.

SIR,—My Lord Mayor Stone has made a good bid for fame, and has done a good work; but he wants some cleverer people about him. As a visitor from abroad I went to the Reception at the Mansion House on Saturday last, after a visit to the Alexandra Palace in the afternoon, and must confess I was horror-struck by the man who announced the carriages in the hall:—"The Mayor of Tureen" (poor Italy!) "A Bishop whose name is *o*nknown." So much for fame—who wants to be a bishop? "Mr. Hexeter, Mayor"; and so on, and worse. As to the Alexandra Palace, I did not get much pleasure from my visit. There was a vast crowd, and I and my party got out into the air as much as possible. A few piercing screams reached us now and then, which, I am told, was the concert. I pitied my poor *préfet*.

I am much pleased with the Lord Mayor for the snub he has obviously tried to give Germany in all these doings.*

A FRENCHMAN WHO KNOWS ENGLISH.

DIVERSION OF SEWAGE FROM THE THAMES.

THE Thames Conservators, in their report, dated the 5th inst., just issued, observe:—

"On reviewing the results of the notices served on various persons and places requiring the diversion of sewage or other offensive or injurious matter from flowing into the river, the Conservators are enabled to report that above the intakes of the water companies only four towns still pass their sewage into the river; of these, two,—Oxford and Reading,—have sewage works in a forward state, and of the other two, Windsor has commenced the sewage works, and Abingdon is about to do the same. A hope may therefore be entertained that above the source of the chief water-supply of the metropolis all sewage will very soon be diverted from the river. Between the intakes of the water companies and the western limits of the metropolis, where the main drainage scheme comes into operation, a less satisfactory state of matters prevails. Notwithstanding the measures taken by the Conservators under their Acts of Parliament, the local authorities, with the exception of Twickenham, have not yet diverted their sewage from the river. The Conservators will not relax their efforts to enforce a compliance with the provisions of the Conservancy Acts until the diversion of the sewage and the consequent purification of the river above the limits of the metropolis have been fully accomplished."

* We hold a quite different opinion on the subject.—ED.

STONE CHURCH, KENT.

The ruins of Stone Church, near Faversham, have been visited by some members of the Archæological Institute. Mr. J. H. Parker, remarking upon the unique masonry of the walls of the chancel, said that he believed the chief portion of it was Romano-British, of about the fifth century. The east end was an addition, probably of the Early English period. The alternate courses of hewn stone and Roman bricks were very remarkable in the original work, the extent of which is indicated by the foundation of a cross wall at its east end. This wall was taken down, when the later eastern portion was added to the chancel, and its base was formed into a step; some of its materials were used in making two other steps up to the new altar. At the west end, Mr. Irvine pointed out the original entrance to the chancel by two steps, descending from the nave. In the lower step he found the round hollow in which a chancel door or gate swung upon a pivot. Mr. Parker remarked that the Romans used that method of hanging doors. Sir John McLean and Canon Scott-Robertson, made some observations respecting traces of early English painting upon the plaster inside the walls.

BRICKS.

At a meeting held at the Hop and Malt Exchange, of various brickmakers supplying the London market, it was computed that there were lost to the building trade through the late floodings of the fields and in diminished moulding, about one-eighth of the season's make, or over one hundred millions of bricks, and a rise in price was consequently threatened.

OPENING OF THE CRESCENT HALL, WALTON-ON-THE-NAZE.

Mr. Robert Warner, of Broomfield, Chelmsford, and the head of the firm of John Warner & Sons, of the Crescent, Cripplegate, London, is a landowner at Walton. Some short time since Mr. Warner established a new foundry and engineering works at Walton, which are now assuming considerable importance, and employing a good number of workpeople. Numerous dwellings accordingly are being erected near, which are beginning to make a new suburb. Mr. Warner, having a desire to afford means for the mutual recreation and improvement of his workpeople, decided to erect a club-room and hall for their use. On the 23rd ult. this building, designed by Mr. T. A. Cressy, of Walton, was opened. The building and surroundings were gaily decorated, and a number of the workmen, headed by the Walton amateur brass band, and carrying banners and flags, made a circuit of the town, and marched to the hall, where a good tea was provided. After tea an entertainment was given in the lecture-room. Mr. Goslin, the manager, from London, in the course of the evening, delivered an address, in which he laid before the members the details of the origin of the movement, and the objects for which the hall had been built, and the Club and Mutual Improvement Society established. At the close of the entertainment many expressions of gratitude were accorded to Mr. Warner for his munificence. The Club is instituted especially for the workmen employed at Messrs. R. Warner & Co.'s Engineering Works, although any one resident in Walton is eligible for membership.

CHURCH OF ST. MARY ALDERMARY.

The church of St. Mary Aldermary, in Queen Victoria-street, is about to undergo extensive repairs and restorations; it is now the church of four united parishes,—St. Mary Aldermary, St. Thomas Apostle, St. Antholin, and St. John Baptist, the two latter parishes having recently become united for ecclesiastical purposes consequent upon the demolition of the church of St. Antholin. The sum proposed to be expended is 8,000*l*. The plans have been prepared by Messrs. Tress & Innes, and approved by the united vestry, and the works will shortly be commenced.

The edifice immediately preceding the present one was founded in the year 1510. It was destroyed by the Great Fire of London, and rebuilt by Sir Christopher Wren upon the plan of the former church.

FENTON TOWN HALL COMPETITION.

In public competition for the new town-hall, police station, engine-house, &c., Fenton, Staffordshire, the urban sanitary authority have awarded the premium to the design submitted by Mr. J. William Stevens, of Wingmore-road, Camberwell, under the motto "Labore vinces."

WHITWORTH SCHOLARSHIPS.

The following is a list of candidates successful in the competition for the Whitworth Scholarships, 1875:—

Joseph Harrison (aged 21), mechanical engineer, Hyde; George Goodwin (20), mechanical engineer, London; John Alldred (21), locomotive engine-fitter, Wolverton; Franklin Garside (20), pattern-maker, Oldham; Frank W. Dick (21), mechanical engineer, Glasgow; Joseph Poole (20), fitter and turner, Dudley.

WORKMEN'S WAGES.

Sir,—I beg to inform your correspondent, "J. Barnett," that the Court of Queen's Bench has recently held in two cases (Millett *v.* Coleman, 39 J. P., 454; and Shaw *v.* Alderson, 39 J. P., 374), that wages are recoverable in the police-courts under the Master and Servant Act. Before these decisions the answer given by the magistrate was a doubtful one. G. K.

INTERMENT OF THE DEAD.

Sir,—Allow a short letter to settle a long, grave controversy which will never be settled by the fishmongers' basket. The closed coffin, as at present constructed, being every way suitable to our method of interment, the objections to it afterwards are easily obviated by making the lid so that the moist earth should soon make openings by dissolving the glue, which secured a longitudinal insertion in it. Senex.

FRENCH ARCHÆOLOGICAL CONGRESS.

The Congress of the *Société Française d'Archéologie* will be held this year at Chalons-sur-Marne, commencing on Monday, the 23rd of August, and ending on the 28th. A list of thirty-four questions for discussion (seven of which relate to matters pre-historic) is published.

The Congress of the *Institut des Provinces* will be held at Autun early in September.

SCHOOL BOARD SCHOOLS.

Siddal (Halifax).—The school at Siddal, erected by the School Board at a cost of 4,600*l*., has been opened. Before the formation of the present board it was resolved to build a school in the neighbourhood of Siddal. The school is large and airy, is fitted up with every convenience, and divided into infant and mixed departments of about equal size. There are three class-rooms to each, and the desks are Moss's patent. It is calculated to accommodate 490, and the cost is about 4,600*l*. Messrs. Horsfall, Wardle, & Patchett, were the architects.

Lee Mount (Halifax).—The infant school here has been formally opened by Mr. Swallow, the chairman of the School Board. Some time ago an offer was made to the Board, by Mr. Joseph Binns, on behalf of the trustees of the Lee Mount Sunday school, that it should be let to the Board at a nominal sum, besides the further offer of the trustees to make it adequate for the requirements of the township, and to build an infant school. The other school has been worked by the Board for some time; but the infant school-room has only just been completed at a cost of about 600*l*., including the chapel-keeper's house adjoining, with accommodation for 140 infants.

BRICKS COUNTED IN OR OUT OF KILN.

In the Crewe County Court, William Bebbington, brick manufacturer, Amor-green, Stapeley, sued Enoch Elson, builder, the Hough, for 13*l*. 14*s*. 9*d*., as balance of account for bricks supplied. The plaintiff stated that in March or April, 1874, he made an oral contract with the defendant, at the corner of a street in Nantwich, to supply him with bricks at 12*s*. 6*d*. per 1,000. The bricks were to be counted into the kiln, otherwise he would charge considerably more—about 14*s*. per 1,000. Defendant was to find coals for the furnace. On several occasions he was short of coals, consequently some of the bricks were not quite so well burned as they might be.—The Judge: You are entitled to be paid for the amount you claim, if the contract was to count them into the kiln.—The witness said that he had sunk two wells for him, for which he charged him 3*l*. Defendant had paid 13*l*. 14*s*. 3*d*., leaving a balance of 13*l*. 14*s*. 9*d*. to be paid. He counted the bricks every week as they were made. He had asked the defendant several times for the account, and he raised no objection until he received the County Court summons.

The defendant deposed that the contract was made for 12*s*. 6*d*. for bricks good out of the kiln. There was no written contract, and plaintiff never said that he would require 1*s*. 6*d*. more if they were counted out of the kiln. Plaintiff had to make the bricks and burn them. He had a contract to build the Willaston schools, but the bricks from plaintiff's kilns were refused, and he had to pay 28*s*. for substitute bricks, while he sold some of the bricks complained of at 23*s*. per 1,000. The bricks were soft and badly made. 12*s*. 6*d*. was more than the average price for the good counting out of kiln bricks. He had about 5,000 of the bricks now, and 5,000 were lying broken. He had sustained a loss of about 50*l*. by the transaction.

The Judge said he was satisfied the contract was to count into the kiln. It was an undefended action. This was subject to a cross action regarding the burning of the bricks.

TO REMEDY DAMP WALLS AT THE SEA SIDE.

Strip off the old plaster, rake out the joints, clean off the dust, throw water on the wall with a brush, coat all over about ¼ in. thick with Portland cement five parts, sharp sand one part; make the surface rough, let it stand two or three days to harden, finish with ordinary mortar (well haired) made with fresh-water sand or fine ashes. If required to be finished immediately gauge with plaster of Paris. Cement should not be used for the finishing coat. W.

STAINED GLASS.

Soham.—A stained-glass memorial window has recently been placed in the east end of Soham Church, which is about 12 ft. by 20 ft., contains twenty different subjects from the closing scenes in the life of our Lord, viz.:—His Entry into the Holy City, His Weeping over Jerusalem, the Last Supper, the Betrayal, the Denial by Peter, Christ's Agony in the Garden, Bearing the Cross, the Crucifixion, the Descent from the Cross, the Burial, Sealing the Stone, the Resurrection, His Appearance in the Garden, &c. The work has been executed by Messrs. Clayton & Bell, London.

CHURCH BUILDING NEWS.

Kittisford (near Wellington, Somerset).—The parish church of St. Nicholas, Kittisford, has been recently re-opened, after various reparations. The decayed old lath-and-plaster flat ceilings to the nave, north transept, and south aisle have been replaced by panelled polygonal ceilings, covered with stained deal boarding. The internal walls have been cleaned and replastered. The whole building (except the chancel and chancel aisle) has been repaved and reseated with two open benches. The tower has been divided off from the nave by a low perforated, ornamental screen. The old oak arches and shafts, separating the nave and south aisle, have been cleaned of whitewash, repaired, and reset. The porch being much decayed was rebuilt to a new design, but all ancient stonework has been re-used, wherever in decent condition. The interesting old font has been slightly repaired and reset on a new platform, while the Jacobian oak pulpit has been divested of paint, and placed on a Ham-hill stone base. The roofs externally are covered with tiles from Pool, near Wellington. The total cost of the works has been about 550*l*. Messrs. W. J. Ardo & Cottrell, of Ashbrittle, were the builders, and Mr. Edmund B. Ferrey was the architect.

Pilsdon.—The interior of the church at Pilsdon (Pilesdon Pen), having undergone restoration, was re-opened for Divine service on the 11th ult. The expenses of the work have been defrayed by the late Mrs. H. Syndercombe Bower, and her son, Mr. H. S. Bower, of Fontmell Parva, near Blandford, the lord of the manor and patron of the living.

Pitney (Langport).—The parish church at Pitney was re-opened on the 21st ult., after restoration costing 1,300*l*. The nave has been rebuilt on the original foundations, the old Ham stone windows and other dressings having been carefully preserved and re-used. The exterior walls are of pointed blue lias stone, laid in regular courses; the inside being of tooled white lias, also in course work. The roof, which is open, is of pitch pine, wrought and moulded, with bosses from the old roof at intersections of the moulded ribs. The covering is of dun-coloured plain tiles. The old pews have been removed, and open benches of pitch pine, varnished, erected in their stead. The windows are glazed in quarry lights,

with tinted borders. The chancel roof has been completed, the bosses being decorated with gilded edgings. Mr. Knowles, Bridgwater, was the architect, and Mr. Cox, Yeovil, the builder.

Awre (*Gloucester*).—By the generosity of Mr. Henry Crawshay, of Oaklands, the old parish church of Awre has been restored at a cost of some 2,000*l.* or 3,000*l.*, and has been re-opened by the Bishop. The church was erected in the early part of the thirteenth century, and consists of a nave and chancel, a north aisle, separated from the nave by an arcade of six fine arches, a good south porch, and a tower at the west end of the nave. The walls, roofs, and floors were all more or less dilapidated, and in some cases in a dangerous condition, especially the chancel, the whole of which had to be taken down and rebuilt. The walls of the church have been pulled down, and rebuilt where necessary; the roofs have been stripped, re-covered with Broseley tiles, and boarded; the floors have been entirely renewed, and laid on a bed of concrete; the windows have been re-glazed, and the whole church has been re-seated; the tower has been restored; a western gallery, which formerly blocked up the tower-arch and window, has been removed; the bells and framing have been put in repair; an area has been made all round the church, with drainage therefrom; and provision has been made for warming the church with Gurney's stoves. In restoring the church, care has been taken by Messrs. Waller & Son, the architects, to preserve every old feature, and to put every old stone as nearly as possible in its ancient place. The colouring in the quatrefoils and ribs in the roof is a copy of the old work; the chancel-screen has been replaced; and the remains of the approach to the rood-loft can still be seen against the north wall of the chancel. The east window is to be filled with painted glass, the gift of Mrs. Crawshay.

Sticklepath (*Devon*).—Sticklepath is about four miles from Okehampton. The unsuitable character of the little chapel there has induced some of the people in the parish to build a better structure. For some time past there has been no service held in the chapel, the mother church of which is at Stampford Courtenay, about four miles off. They pulled the old erection down, bought and razed to the ground the cottages that stood in front, and having a clear approach for building they proceeded to build, and the opening services have been held. The structure is small, plain, and (barring the seats) unvarnished. It is in the Early English style, and bears a resemblance to a new Board school. There is a bell at one end of the roof, and at the other end a cross. The edifice cost about 600*l.*, but is very diminutive, holding about 100 persons. There has been no expenditure on ornament. Messrs. Geen & Ash, of Okehampton, are the builders, and Mr. Hooper, of Hatherleigh, the architect.

Lassington (*Gloucester*).—The picturesquely-situated and ancient little church at Lassington, three miles from Gloucester, having been restored, has been re-opened for divine worship by the Bishop of the diocese. The church is dedicated to St. Oswald. Several months ago Messrs. Medland & Son, architects, made a survey of the church, with a view to its renovation; they found that it was necessary that the whole of the structure should be taken down and re-erected, with the exception of the tower, and its quaint roof. The restoration, or rebuilding, has therefore been carried out in accordance with these ideas. A new south porch, chancel-arch, and nave windows, have been built of Norman character; and small lancet windows have been put in the south side of the chancel, to correspond with the original windows at the east end and north side of the chancel, which have been replaced. New open timber roofs, stained and varnished, have been constructed throughout, and covered with old stone tiles. The floors of the aisles and passages have been laid with Godwin's tiles. The seating throughout, and the lectern, are of pitch pine, varnished only. A new font has been erected, on a stone base, in the south-west corner of the nave. Behind the altar a small reredos has been fixed, consisting of central gable, supported on polished alabaster columns, and enclosing the sacred monogram, surrounded with a wreath of thorn. This work, and also the font and the carvings throughout the church, have been executed by Messrs. Frith & Morris, sculptors. The chancel window and south window of the nave have been filled with stained glass, by Evans, of Smethwick. The works have been executed by Messrs. Wingate & Sons, under the superintendence of Messrs. Medland & Son. The churchyard has been levelled, footpaths have been formed round the church, and a new churchyard gate with steps, thereto has been constructed.

Builth.—The new church here has been consecrated and opened. It is constructed in the Early English style, on ground contingent to its predecessor, and consists of centre and side aisles, chancel, place for organ, and vestry. It will seat 450 persons (the old one providing for only 180). The length of the nave is 66 ft.; width, 25 ft. 2 in.; side aisle, 14 ft. 9 in. wide; height from nave floor to wall-plate, 24 ft., and to apex of roof, 46 ft.; chancel, 30 ft. 6 in. long, from west to east, 20 ft. 6 in. wide; the vestry and organ-place measure 20 ft. by 14 ft. 3 in. The outer walls are built of Llanelwedd stone, which is obtained in the neighbourhood, and all the dressings are Box stone. The interior is faced with Bath stone painted light red. The roof is open-timbered of pitch pine, plastered between rafters and finished of warm (vellum) tint; the principals rest on corbels exposed to view. The nave and aisles are divided by an arcade of four arches, supported by octagon pillars, the caps of which are left in block for carving. The tracery windows are plain glass. The chancel and vestry are divided by an arcade of double arches, supported by a slender column. The walks are paved with Broseley tiles of black and red, and the chancel with Godwin's tiles. The seats are painted deal. The contract was undertaken by Messrs. Stephens & Baston, of Bristol, Mr. J. Norton, of London, being the architect; Mr. H. Carr, Builth (formerly of Bristol), was the clerk of the works. The old building, about eighty-five years old, of the quaint "high period" type, is to be entirely pulled down to make way for an entrance.

Howle Hill.—The little church here recently opened has been erected at the sole cost of Miss Philips, of Walford, near Ross, and consists of nave, chancel, sacristy, and south porch, and will accommodate rather more than 100 sitters, the building being a simple specimen of Early English architecture, executed by Mr. William Griffiths, of The Lea, near Ross, builder, from the designs and under the superintendence of Messrs. Haddon, of Hereford and Malvern, architects, the outlay being about 1,300*l.*

Stretford.—Stretford parish church has been re-opened, after restoration. The church consists of a nave with north aisle, chancel with north aisle, vestry, and south porch; and was in a sad state of dilapidation. The ground around was much above the floor of the interior, which was whitewashed, and fitted with high-backed pews of the horse-box fashion, littered down with straw to keep out the damp. The building is a specimen of Early English type, the roof continuing from east to west in one span, with king-post principals rising immediately over the centre arcading, the timbers being of massive oak. The work of restoration has been to remove the lath and plaster ceilings, and to throw open this roof by cleaning and renovating the timbers, which are stained and varnished, and re-covering the exterior with Broseley tiles, surmounted with terra-cotta cresting. The south porch and campanile, or bell turret, over the west gable, of oak, have been renovated, and the latter covered with a shingled roof, and surmounted with the ancient vane. The whole of the stonework, so thickly coated with plaster and whitewash, has been laid bare and well pointed. It was found necessary during the progress of the work to take down and re-build the south wall, and this has been cautiously done by replacing the whole, stone for stone. The chancel is fitted with oak altar-rail and standards, and stalls of pitch pine. The gangways are laid with Godwin's encaustic tiles. The windows are re-glazed with the old glass, as far as it could be utilised. The works were executed by Mr. John Sandford, of Norton Canon, under the direction of Messrs. Haddon, of Hereford and Malvern, architects, the total expenditure being within 600*l.*

East Winch.—The parish church has been re-opened after restoration. It is in the Perpendicular style, and was probably built in 1460. The work was entrusted to Sir G. Gilbert Scott, architect. The chancel has been thoroughly restored by Mr. E. Kent, the impropriator of the tithes; and a new reredos, painted by Mr. W. Munton, Lynn, erected. The length of the interior of the church, now that the seats have been removed out of the tower, is 104 ft. It formerly seated about 300 persons; it will now accommodate nearly 400. The total cost of the work will be about 1,500*l.* The work has been carried out by Messrs. Burdell, Brothers, of Middleton, under the direction of Mr. King, chief clerk in the office of Sir G. G. Scott.

Books Received.

Street's Indian and Colonial Mercantile Directory. Cornhill, 1875.6.

A new issue of the "Indian and Colonial Mercantile Directory" has been published, and will be found valuable. The various steam routes to the places treated of, with rates of fares, and times of transit, are given; particulars of the various railways in operation or construction are also supplied, and of the principal products, and the articles in which the trade of each place chiefly consists, so as to guide merchants with regard to shipments. The lists of the various traders, which give the merchant full particulars of possible buyers abroad, populations, extent of countries, and official information, appear to have been carefully revised.

Handbook of House Property. By E. L. Tarbuck, Architect. London: Lockwood & Co., 1875.

This is intended to serve as a popular guide to the purchase, mortgage, and compulsory sale of houses and land, and treats also of dilapidations and valuations generally. Mr. Tarbuck has divided his little book into three parts,—the First, relating to the law affecting land and houses; the Second, to the practice in valuations; and the Third, to procedure in building houses. He has brought together and condensed a large amount of floating information, and has produced a manual which will be found a very useful introduction to the study of the subjects treated of. We are glad to be able to recommend it.

Miscellanea.

Meersbrook Bowling-green, Sheffield.—Last year a number of gentlemen resident at Heeley, impressed with the desirableness of providing local facilities for the healthful outdoor exercise of bowling, formed a committee for giving effect to the scheme, and Mr. H. Matthews, architect, prepared the plans. It was ascertained that upwards of 2,000*l.* would be required, and the inaugural opening of the club has recently taken place. The premises stand upon a pleasantly-situated plot of freehold land, the main entrance to which is from Victoria-road. The green itself is 66 yards by 40 in extent, and it is intended to add to its attractions a shrubbery. The block of buildings comprise, in addition to a committee-room, residence for the steward, bar, &c., a spacious saloon, 31 ft. by 21 ft. and 16 ft. high; a billiard-room, 32 ft. by 26 ft., and 20 ft. high, supplied with lavatory and other requisites. The buildings have been so arranged that the billiard-room and the saloon may be thrown into one, so that a large apartment may be at the disposal of the committee for parties and concerts. The work has been carried out, under the superintendence of Mr. Matthews, by the following contractors:—Masons' and joiners' work, Mr. Wilkinson; plasterers' work, Messrs. Barter, Unwin, & Son; painters' work, Mr. G. E. Bennett, Fargate; plumbing and gasfitting, Mr. J. F. Tayler, Norfolk-street; slaters, Messrs. Staniforth & Lee. The tiles have been supplied by Mr. H. Webb, of Worcester; and the green itself has been prepared and laid by Mr. W. Markham.

Destructive Fire at Hereford.—The extensive timber-yard of Mr. Bower, Bath-street, Hereford, has been almost completely destroyed by fire, which broke out on the 28th ult. about one o'clock. The stock and permanent plant and the workmen's tools it was found impossible to save, partly from the rapidity with which the flames spread, and partly owing to the inadequacy of the fire-engines to cope with the fire. These premises were about the most complete of the kind in the country, and the loss is estimated at about 10,000*l.*, exclusive of the workmen's tools, one set of which, belonging to the foreman, valued at 70*l.*, have been lost. It is conjectured that the fire originated near the boiler; that some shavings and chips which may have been strewed alongside by the planing machine were ignited by a spark from the fire-hole. Some timber afterwards caught fire, and the building after this was speedily enveloped in flames.

The Grosvenor Club for Workmen.—The concert and lecture hall, which has been in course of erection during the last twelve months, in connexion with the Grosvenor Club for Workmen, in Buckingham Palace-road, has been opened. This club was designed upon the model of a West End club, to supply workmen at an expense within their means with the comfort and advantages of club life, and after an existence of nearly three years the object of its promoters may be said to have been so far accomplished. Its chief merit, which augurs well for permanent success, is that it is self-supporting. This, however, is to be said, that the club started with a capital building in a most excellent situation, an advantage which it owes to the late Marquis of Westminster and the present duke, and a large number of benevolent donors. The subscription is only 10s. a year, with an entrance-fee of 5s., and there are at present about 1,200 members. The new structure is a large building, intended not only for the use of the club, but for letting to the public for meetings, lectures, concerts, and balls, &c., and thus to add to the funds of the institution. It consists of a hall, 90 ft. long, 32 ft. wide, and 26 ft. high, with a platform at one end and a music gallery at the other. The hall has been erected, from the designs of Mr. H. A. Hunt, jun., by Messrs. H. J. & C. Wilkes, and will cost, exclusive of decorations, between 3,500*l.* and 4,000*l.*, towards which the Duke of Westminster has contributed 1,000*l.*

The Amalgamated Society of Engineers, Machinists, &c.—In the twenty-fourth annual report of the Amalgamated Society of Engineers, Machinists, Millwrights, Smiths, and Pattern Makers, the general secretary remarks:—"In regard to the increase of members, we may state that on the last club night of 1873 we had 42,382, and on the last one of 1874 that number was augmented to 43,150, giving an increase of 768. Between the same periods twenty new branches were opened—namely, fourteen in England, two in Scotland, one in Ireland, one in Canada, and two in New Zealand, making the total number of branches at the close of 1874 to be 379. The geographical area over which the branches extend will be sufficient evidence to show that the influence and operations of our society are stretching into every quarter of the globe, where commercial civilisation has penetrated and found a home. We shall now draw attention to our financial transactions, and which we have found to be of a very satisfactory nature, for after meeting all our liabilities, we have been able to add to our reserve fund the sum of 38,066*l.* 9s. 3d. This, added to our balance at the beginning of 1874, which was 200,923*l.* 1s. 6½d., gave us at the close of the year a reserve fund of 238,989*l.* 10s. 9½d., or 5*l.* 10s. 9½d. per member."

Borough Surveyor of St. Alban's.—A special meeting of the Town Council was held in the Council Chamber, Town-hall, on the 26th ult., to consider the application for the office of surveyor. At their last meeting, the Mayor said it was resolved that they should advertise for a successor to Mr. Colbron, which had been done, and they had received letters from four candidates. The first was from Mr. Ingram, the former surveyor, who again offered his services on condition that the duties of surveyor and collector were separated, as he could not undertake both. The other three applications were Mr. J. Colling, of Lambert; Mr. J. Cook, Southwick, Sunderland; and Mr. J. H. Duckingfield, of Rochdale. A lengthy conversation resulted ultimately in the adoption of a motion by Mr. Alderman Martin,—"That a special meeting of the council be called to take into consideration the desirability of rescinding the resolutions relating to the offices of surveyor, inspector of nuisances, and collector of rates, being held by one and the same person, and to rescind such resolutions if deemed necessary, and to make such orders thereon as shall be considered advisable."

Good Templars' Hall at Weymouth.—The foundation-stone of a Good Templars' Hall in High-street,—on a site adjoining the old Town-hall,—was laid on the 28th ult. The ceremony was performed by Mrs. Talbot Greaves, her husband, the rector of Melcombe Regis (the Rev. Talbot Greaves), also attending and delivering an address on the occasion. Mr. G. R. Crickmay is the architect. The new hall will consist on the ground floor of a coffee-room, 17 ft. by 15 ft. 6 in., together with bedrooms and sitting-room for the attendant, and an ante-room for the members, the whole of the first floor being devoted to a hall 45 ft. by 20 ft.

Breach of Contract.—At the Bedfordshire Assizes, an action was tried, before Baron Bramwell, in the Nisi Prius Court, John Pepper, brick-maker, Eversholt, being the appellant, and Benjamin Litchfield, contractor, Bedford, respondent. The cause of action arose in the refusal of the defendant to accept two quantities, viz., 100,000 and 50,000 of bricks, which plaintiff alleged he had agreed to purchase. Defendant's pleas denied the breach as regarded 6,100, affirmed the bricks were not of the proper quality, and asserted that a sum of 10*l.* 7s. 5d. paid into court was adequate remuneration for the bricks received. Mr. Pepper spoke to defendant coming to his brickyard in February last, and ordering the quantities of bricks as set forth in the action, having first examined and expressed approval of them. He affirmed the bricks sent were of exactly the same description as those examined. His Lordship said, inasmuch as defendant had used a portion of the 17,000 he must pay for the whole. It was for the jury to say at what price. The jury valued the bricks at 28s. per 1,000,—a verdict, in fact, for 23*l.* 16s., less the 10*l.* 7s. 5d. paid into Court.

The Trades Union Congress. — The Trades Union Parliamentary Committee have issued the following circular to the officers of the trades societies and trades councils throughout the United Kingdom:—"Gentlemen: The next trades congress is fixed to take place in Glasgow, on Monday, October 11th, and following days; we therefore request you to appoint your delegates without delay, so that they may be communicated with as the time approaches for the congress to assemble. In consequence of the position of the Labour Laws Bills in Parliament we are unable to determine the exact wording of our programme, but it will be issued as soon as the Bills have received the Royal assent and they have become law. The committee would urge upon those societies who have not yet sent their contributions to do so at once, as the expenses attending the work of the committee have been very heavy in connexion with the Labour Bills now before Parliament, and the work accomplished has been of the most important character." The circular is signed on behalf of the committee by "George Howell, secretary, 27, Villiers-street, Strand," and "Daniel Guile, treasurer, 200, New Kent-road."

Worcester Association for Building Dwellings for the Labouring Classes.—The twenty-first annual general meeting of the above association was held at the Guildhall, last week. According to the report then read, the governors "consider it imperatively necessary, from the position in which the association is placed, that the proprietors should authorise them to take at once the necessary steps for disposing of the property to the best advantage. They regret that they see no alternative, and are much mortified to be compelled, after twenty-one years of anxious solicitude for the welfare of the association, to propose that their labours should terminate in such an unsatisfactory manner." The financial statement showed an actual balance in hand of 13*l.* The mortgages upon the property amount to 2,200*l.* After some discussion the report and balance-sheet were adopted, and a special committee was appointed to arrange for the disposal of the property.

Building Operations at St. Luke's.—At the meeting of the guardians of the Holborn Union, on the 27th ult., Mr. Hopkins called attention to the state of the unfinished buildings in connexion with the St. Luke's Workhouse. These buildings are without a roof. During the winter the frost had affected the exterior, and now the rain was damaging the interior of the works. The time for the completion of the work had expired a month ago. He concluded by moving that the solicitor be instructed to write to the contractor, informing him that the Board would take urgent steps, and enforce the penalties if the contract be not completed without delay. Mr. Snell, architect, explained that the reason why the work was so behind hand was because there was a delay in the delivery of the ironwork. He further stated that he could not excuse the want of foresight on the part of the builder, and that he would be very glad if the builder could be made to move faster. He could say that as a rule builders had very great difficulty with ironfounders. After some further conversation, the motion was put and carried.

Great Chart Parish Church.—The work of re-seating the parish church of Great Chart, Kent, under the direction of Mr. Blomfield, architect, is now going on.

Ventilation of Glastonbury Kitchen.—In a recent paper read before the Bath and West of England Society, Mr. Neville Grenville, M.P., called attention to the system of ventilation employed in the great kitchen of the abbey, a building still almost, if not quite, perfect. The system must have succeeded in all weathers. The building is about 39 ft. square, and has a door in the middle of the south side, another opposite; a fireplace in each corner, and a window on every side. The high-pitched roof converges to an octagon lantern, with an upper lantern above it, so arranged that cold air entering at the lower one and meeting the air from below, both would blow out above and effectually ventilate the building, without excessive draught.

The Builders and the Hove Commissioners.—A numerously attended meeting of builders was held at the Albion Inn, Hove, on Tuesday in last week, for the purpose of taking into consideration the best means of obtaining an amendment of the Hove bye-laws, so far as they related to building operations in that district. It was stated that some portions of the laws were very oppressive and impracticable; and Mr. C. O. Blaber (surveyor) moved the adoption of a memorial setting forth the clauses complained of. This resolution was carried, and it was resolved that the memorial, when signed by the builders, should be presented to the Hove Commissioners by a deputation consisting of Messrs. Cheal, Eldridge, Lidbetter, Nurcombe, and Stenning.

The Wilberforce Memorial.—On the 26th ult., the memorial-stone of the late Right Rev. Samuel Wilberforce, D.D., Bishop of Winchester, was laid in the permanent church of St. Augustine's, the site of which is in Lynton-road, South Bermondsey. The church will consist of a chancel 40 ft. deep, 27 ft. 6 in. wide, and nave 77 ft. long, of the same width, with north and south aisles, 13 ft. wide. The chancel will have a square east end, with aisles running round to the north, south, and east sides 5 ft. wide. The church will seat about 900 adults, and will cost about 12,000*l.*, exclusive of steeple.

The Opera House on the Embankment. Mr. Mapleson has written the following letter to Colonel Sir J. M. Hogg, M.P.:—

"Sir,—I beg most emphatically to deny the statements made in the House by Colonel Beresford, with whom I have never had any communication, nor do I know that gentleman.

With regard to the appointment of the architect for the new Opera House, the design was selected by a committee from a large number that were sent in, and the architect's name was not known until afterwards.

No contract has yet been made for the erection of the building, but, in order to save time, Mr. Webster has, by the advice of the architect, been employed to prepare the land for putting in the foundations."

Dorking Church.—The south porch of the parish church, which the parishioners have undertaken to construct, as a token of their appreciation of the services of the Rev. Philip Hoste, during his residence in this town, is, we understand, to be commenced at once, and last week the architect, Mr. Woodyer, met some of the Hoste testimonial committee at the church, to discuss the matter. The porch will doubtless prove a useful as well as an ornamental addition to the church, and not more than about 40*l.* of the 370*l.* it is estimated the work will cost, remains to be subscribed.

The Hermann Memorial in Germany.—Extensive preparations have been made for a great national festival on the occasion of the unveiling of the colossal statue of Armin, or Hermann, the German hero who, according to Tacitus, effected the overthrow of Roman dominion by the battle in the Teutoburg Forest in the year 9 A.D. The colossal size of the monument, which has been erected on a hill near the place where the battle was fought, may be gathered from the fact of the statue, which is of iron, weighing not less than 145,000lb.

The Mayor Collection of Drawings.—Messrs. Hogarth, of Mount-street, have now on view the collection of original drawings and sketches by Old Masters formed by the late Mr. William Mayor, of Bayswater. The specimens are about 1,000 in number, and illustrate most of the different schools of Europe. The desire is to sell them as a whole. A good catalogue has been printed.

The Albert Medal.—At the request of the London Society of Arts, to find a fit person for the honour, the Royal Academy of Rome have selected the civil engineer, Grattoni—the surviving engineer of the Mont Cenis tunnel—as the recipient of the Albert medal.

Laying the Foundation-stone of a New Chapel of Ease, Tonbridge.—On the 31st ult. a distinguished company assembled in Dry Hill Park, to witness the foundation-stone laying, by Mrs. J. Deacon, of a new Chapel of Ease, which in future is to be known as St. Saviour's. The church, which is to be the gift of Mr. J. Deacon, will be built by Messrs. Punnett & Sons, from designs of Mr. Ewan Christian, and it is calculated that it will accommodate 450 seat-holders. The cost is estimated at about 3,000*l.*

Fever at Sevenoaks.—A special meeting of the Local Board was held at Sevenoaks on the 31st ult., to consider a report from Dr. Baylis, the sanitary inspector, as to the condition of the town. Dr. Baylis stated that forty cases of fever had come under his notice, and two others had just been reported to him. The fever arose from the existence of cesspools and the bad construction and filthy condition of certain buildings. It would be necessary to adopt a system of drainage, upon which he would further report.

An Elizabethan Cottage at Southleigh is attracting the attention of archæologists. According to local papers, among the carving is the emblem of St. Luke, and the shields have the crosses of St. George and St. Patrick, or St. Andrew, painted on them. This is supposed to be a portion of the reredos of the ancient altar of Southleigh Church. The date is said to be about Edward VI.'s time, and it is probably a relic of the taste and munificence of the Bonvilles, the ancient lords of Southleigh.

Value of Freehold Land in the City of Westminster.—An important site, comprising Nos. 53A, 53½, and 54, Parliament-street, containing an area of 2,363 superficial feet, was sold by auction, by Mr. Robins, of Waterloo-place, on Wednesday last week, for 17,400*l.*, being 7*l.* 10*s.* per foot. It is understood that the property was purchased on behalf of Mr. Mapleson, for the purpose of the new National Opera House and Royal Academy of Music.

Saxmundham Church Restoration.—A parish meeting was held at the Market Hall on the 29th ult. to receive a report of the receipts and expenditure of the fund raised for the restoration of the parish church and of the work done. The works were carried out under the direction of Mr. R. M. Phipson, architect; Mr. Grimwood, of Weybread, being the contractor. The total expenditure upon the restoration and enlargement of the church and chancel has been 2,614*l.* 3*s.* 9*d.*

The Lambeth Waterworks.—The new intake and reservoirs which have been constructed by the Lambeth Water Company at West Molesey have been inspected by a large body of the shareholders, whose visit, though ostensibly for business purposes, was not without the characteristics of a picnic party, owing to the provision that had been made by the chairman and directors for securing the comfort and pleasure of their guests.

Crystal Palace School of Art, &c.—The award of prizes to successful students in the classes for water-colour painting, taught by Mr. Edward Goodall, and for drawing from the figure and modelling in clay, instructed by Mr. W. K. Shenton, in the Ladies' Division of the Crystal Palace School of Art, Science, and Literature, was made on Saturday last. The judges were Sir John Gilbert, A.R.A., Mr. Louis Haghe, and Mr. T. Woolner, R.A.

Bristol and Gloucester Archæological Society.—A meeting to consider the advantage of forming a district archæological society was recently held at the Bristol Museum and Library, Dr. John Beddoe in the chair. The proposal for such a society originated with Mr. John Taylor, who submitted the scheme, which, after discussion, was unanimously adopted. A provisional committee was formed, and rules were agreed upon.

Strike of the St. Gothard Tunnel Workmen.—A strike of 2,200 men has occurred on the St. Gothard Tunnel works. They demanded the establishment of provision depôts by the contractors, and a rise of wages. A number of the men, armed, blocked up the Goeschenen (northern) entrance to the tunnel. A riot ensued.

Ornamental Ironwork.—The ornamental railings and gates at the Deaf and Dumb Asylum, Margate, recently opened by the Prince and Princess of Wales, were executed by Messrs. Alexander Macpbail & Co., ironfounders, Upper Thames-street, London.

Department of Science and Art Bill.—The Lord Chancellor, in moving that this Bill be read a second time, explained that it was rendered necessary by the form in which Sir Joseph Whitworth desired to secure his grant of 3,000*l.* a year to the Department for the Promotion of Science, and that it would enable the Department to take devises of land for this purpose if under the control of Parliament. The Bill was read a second time.

A Convalescent Home in Yorkshire.—Through the liberality of Mr. Charles Semon, J.P., of Bradford and Broughton Hall, near Skipton, a convalescent home for sixty inmates has been erected on the verge of Rombald's Moor, near Ilkley, Wharfedale, Yorkshire, at a cost of 8,000*l.*

Death of Mr. James Hughes, Architect, Charlemont.—The demise of this gentleman, on Saturday last, at his residence, Charlemont, is announced. The deceased was an architect of ability, and several ecclesiastical structures, and other buildings, attest his skill. He died at the comparatively early age of forty-eight years.

L'Association pour l'Avancement des Sciences.—This Association, which was founded in Paris at the conclusion of the war, on the model of the British Association for the Advancement of Science, having now arrived at its fourth year of existence, will hold its next annual congress at Nantes, in Brittany.

Strike at Dundee.—Thirty-one mills are closed, and upwards of 12,000 persons idle. An open-air mass meeting of the operatives was held on the 27th ult.; 10,000 men and women attended. It was resolved to continue the strike till the notices reducing the wages by 10 per cent. are withdrawn.

TENDERS

For Kentish rag walling and iron railing at Elmer's-end, Beckenham, for the Crystal Palace District Cemetery Company. Mr. A. G. Hennell, architect:—

Downs & Co.	£1,682 0 0
Willson, Brothers	1,597 0 0
Potter	1,198 0 0

For additional stables for Messrs. Crosse & Blackwell, in Crown-street, Soho. Mr. R. L. Roumieu, architect. Quantities taken out by Messrs. Welch & Atkinson:—

Dove, Brothers	£3,795 0 0
George Smith & Co.	3,760 0 0
Longmire & Burge	3,757 0 0
Holland & Hannen	3,649 0 0
Macey	3,561 0 0
Southcott	3,258 0 0

For the Fountain-road School, to accommodate 250 boys, 250 girls, and 250 infants, for the Kingston-upon-Hull School Board. Mr. W. Botterill, architect. Quantities supplied:—

Clarkson & Son	£7,530 0 0
Grassby	7,507 15 0
Stanley	7,500 0 0
Hockney & Liggins	7,216 0 0
Drewery & Harper	7,125 14 0
Habbershaw	7,065 2 6
Skinner	7,025 0 0
Sergeant	7,020 15 0
Musgrave	6,860 0 0
W. & J. Hall	6,576 0 0
Jackson*	6,420 0 0

* Accepted, subject to the approval of the Education Department.

For the erection of new school buildings, Codford St. Mary, Wilts. Mr. E. H. Lingen Barker, architect:—

Ford	£480 19 6
Seamell	440 0 0
Hopkins & Son	438 10 6
Gasaford (accepted)	422 15 3

For the erection of lecture-hall, class-room, &c., Victoria-road Church, Leicester. Messrs. J. Tarring & Son, architects:—

Loveday	£2,840 0 0
L. H. & R. Roberts	2,580 0 0
Richards	2,508 0 0
Gilbert & Pipes	2,229 0 0
Boden	2,095 0 0
Bland & Sons (accepted)	1,985 0 0
Lighting.	
Rothwell	85 10 0
Webb (accepted)	65 19 0
Warming.	
Boulting	97 15 0
Gimson & Co.	67 5 0

For cemetery chapels, lodge, and entrance, for the Hampstead Rural Board. Mr. Bell, architect:—

Stimpson & Co.	£5,677 0 0
Gould & Brand	5,647 0 0
Scrivener & White	5,593 0 0
Manley & Rogers	5,417 0 0
Watts	5,416 0 0
Niblett & Son	5,389 0 0
Boyd & Jopling	4,990 0 0
Stains & Son	4,974 0 0
Hobson	4,843 0 0
Crabb	4,550 0 0

For decoration of St. Thomas's temporary church, Westbourne-grove. Mr. T. Hayter Lewis, architect:—

Hayward & Son	£237 14 0

For the erection of new middle-class school, Wrotham-road, Handsworth, for Mr. E. Haywood. Mr. W. Tadman Foulkes, architect. Quantities by Mr. W. A. Phipson:—

Smith & Son	£1,233 0 0
Barker & Son	1,198 0 0
Bloore	1,172 0 0
Lidsey	1,160 0 0
Sapcote & Son	1,156 0 0
Steel	1,100 0 0
Hughes (accepted)	1,090 0 0

For alterations to a dwelling-house at Clapton, for Mr. J. Crook. No quantities supplied. Mr. Edward Clark, architect:—

Hunt	£810 0 0
Brightmore	744 0 0
Fox	660 0 0
Raby	649 0 0

For rebuilding No. 10, Little Tower-street. Mr. Sextus Dyball, architect:—

Croaker, Brothers	£3,570 0 0
Killby	3,420 0 0
Ashby, Brothers	3,398 0 0
Holland & Hannen	3,395 0 0
Patman & Fotheringham	3,256 0 0
Brass	3,217 0 0
Newman & Mann	2,948 0 0
Browne & Robinson (accepted)	2,864 0 0

For alterations to the Duke of Marlborough, Dalston. Mr. H. J. Newton, architect:—

Godden	£280 0 0
Shurmur	269 0 0
Boden	218 0 0
Larter	199 0 0
Wells (accepted)	187 0 0

For alterations to the Duke of Sussex, Islington. Mr. Newton, architect:—

Boden	£240 0 0
Wells	225 0 0
Taylor	197 0 0
Hockley (accepted)	190 0 0

For repairs to the Duke of York, Somers-town. Mr. Newton, architect:—

Hockley	£134 0 0
Shurmur	117 0 0
Boden (accepted)	115 0 0

For alterations and decorations to St. Bride's Church, Fleet-street. Messrs. Arding, Bond, & Buzzard, architects:—

Hayward & Son	£1,255 0 0

For the erection of a pair of residences, at Edgbaston, Birmingham, for Mr. E. L. Tyndall. Messrs. Payne & Talbot, architects. Quantities by Mr. T. H. Mansell:—

Moffat	£3,277 0 0
Briley	3,200 0 0
Parker & Son	3,027 0 0
Partridge	3,000 0 0

For the erection of a residence, at Edgbaston, Birmingham, for Mr. H. W. Whitmore. Messrs. Payne & Talbot, architects. Quantities by Mr. T. H. Mansell:—

W. & J. Webb	£2,830 0 0
Wilson & Son	2,800 0 0
Smith	2,770 0 0
Briley	2,700 0 0
Jones & Son	2,699 0 0
Partridge	2,500 0 0

For stabling, coach-houses, and attendant's rooms (exclusive of fittings), at Aske Hall, Richmond, Yorkshire, for the Earl of Zetland. Quantities by Mr. George Connell. Mr. Thomas Oliver, architect:—

Gradon	£12,387 0 0
Millar	12,112 0 0
Reed	12,026 0 0
Whitely	12,020 0 0
Shaw	11,936 0 0
Simpson & Co.	11,716 0 0
Allison	11,540 0 0
Elliot	11,298 0 0
Keswick	11,180 0 0
Watson	10,750 0 0
Yeo	10,550 0 0
Armitage (accepted)	10,345 0 0

For the erection of house, shop, and warehouse, in High-street, Wapping, for Mr. J. T. East. Mr. Charles Dunch, architect. Quantities by Mr. G. P. Raggett:—

Read & Son	£4,200 0 0
Palmer	4,190 0 0
Johnson	3,770 0 0
Killby	3,740 0 0
Perry	3,739 0 0
Ennor	3,712 0 0
Elkington	3,683 0 0
Outhwaite & Son (accepted)	3,597 0 0

For new concert-hall and alterations to the Town of Ayr public-house, Canning-town. Messrs. Ingram & Hollands, architects. Quantities supplied:—

Atherton & Salter	£725 0 0
Curtis	680 0 0
Stephenson	680 0 0
Moreland & Nixon	630 0 0
Heiser (too late)	623 0 0

For a house in Waddon-road, Croydon:—
Ridge & Kingsland, accepted.

TO CORRESPONDENTS.

A. M. (thanks).—T. W. (shall appear).—J. C. K. (shall appear).—W. H. W. (shall appear).—C. P.—L.—H. & Son.—P. Brothers.—L. L.—J. K.—H. M.—C. I.—T. & Son.—J. W.—Dr. S.—Dr. O. D.—G. T. C.—E. P.—A Bricklayer.—T. O.—J. R.—A. J. W.—W. T. F.—W. H. G. V. & M.—W. W.—S. D.—H. S.—T. & R.—J. O. & Son.—Several communications in type are unavoidably postponed.

We are compelled to decline pointing out books and giving addresses.

All statements of facts, list of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

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